AN AUDIT OF AMERICA

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AN AUDIT OF AMERICA

The text of this book is a summary of the material contained in

RECENT ECONOMIC CHANGES

IN THE UNITED STATES

The Report of the Committee on Recent Economic Changes of the President's Conference on Unemployment, Herbert Hoover, Chairman; including the reports of a special staff of The National Bureau of Economic Research, Inc.

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A Summary of Recent Economic Changes in the United States

BY

EDWARD EYRE HUNT

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COMMITTEE ON RECENT ECONOMIC CHANGES, OF THE PRESIDENT'S
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FOREWORD

The report on "Recent Economic Changes in the United States," published in two volumes in May, 1929, presented the results of a national survey of post-war developments in our economic life, particularly those since the recovery from the depression of 1920–1921. The survey was made for a committee of the President's Conference on Unemployment and was financed by grants from the Carnegie Corporation of New York and the Laura Spelman Rockefeller Memorial.

The report made public the Committee's conclusions and the findings of a special staff of the National Bureau of Economic Research on which the conclusions were based. The National Bureau was solely responsible for the survey; the Committee was solely responsible for the conclusions which are summarized in Chapter XV of this volume.

The members of the Committee were Herbert Hoover, Chairman; Walter F. Brown, Renick W. Dunlap, William Green, Julius Klein, John S. Lawrence, Max Mason, George McFadden, Adolph C. Miller, Lewis E. Pierson, John J. Raskob, Arch W.

Shaw, Louis J. Taber, Daniel Willard, Clarence M. Woolley, Owen D. Young, and Edward Eyre Hunt, Secretary. In the later deliberations of the Committee the Chairman was unable to take part and Arch W. Shaw acted as Chairman.

The members of the expert staff who prepared the chapters of the fact-finding report, under the direction of the National Bureau, were Edwin F. Gay, Leo Wolman, Dexter S. Kimball, L. P. Alford, Willard L. Thorp, John M. Gries, William J. Cunningham, E. S. Gregg, Melvin T. Copeland, Henry S. Dennison, Edwin G. Nourse, Frederick C. Mills, O. M. W. Sprague, W. Randolph Burgess, James Harvey Rogers, Morris A. Copeland and Wesley C. Mitchell.

As secretary of the Committee and editor of the report I have been asked from many quarters to summarize the findings. This has been far from easy. Yet I think the survey may be interpreted as a description of the levels on which the American people live, explained so far as may be by recent changes in manufacturing, construction, transportation, marketing, labor, management, agriculture and finance. The Committee on Recent Economic Changes added the important conclusion that if we are to maintain our advantage and fully to realize our possibilities, we must develop a technique of balance—a larger degree of influence over the economic forces which are revealed in the report.

The period since the report was published has been characterized by the same spotty prosperity on which the Committee laid emphasis. We have also observed in recent months, evidences of a dip in the business cycle, followed by a stock market crash. As a result of these events and at the suggestion of President Hoover, a large amount of public works, federal, state and municipal, has been set in motion, and the railroads, the telephone and telegraph companies, the electric light and power companies and other industries have inaugurated programs of construction and maintenance. These efforts have already exerted an influence in the direction of economic balance.

"An Audit of America" is a summary only. For information as to sources, for the details on which the generalizations rest, for charts, diagrams and tables which make clear matters which must here be treated in very cursory fashion, the reader is referred to "Recent Economic Changes." Indeed, this volume can give only the round figures of the American audit, with some suggestion as to the direction and the magnitude of recent trends. For the sake of brevity it omits many names, all of which are to be found in the complete text or in the acknowledgments listed in the report.

Portions of this summary have been submitted to the experts who prepared the chapters of "Recent Economic Changes," but they are in no way responsible for the present volume. I am doubly indebted to them, since not content with their accomplishments of last year, they have found time to read and to criticize the summary. I am under a similar obligation to Arch W. Shaw, Chairman of the Committee on Recent Economic Changes; to J. B. Lockwood, A. Lane Cricher, James S. Taylor, E. G. Montgomery, Ray Hall, Grosvenor Jones, W. H. Rastall and Constant Southworth, of the Department of Commerce; to John S. Keir; to Spencer Miller, Jr., of the Workers' Education Bureau; and to Florence C. Thorne of the American Federation of Labor.

EDWARD EYRE HUNT.

WASHINGTON, D. C.,
January 1, 1930.

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AN AUDIT OF AMERICA

I

THE NEW DISCOVERY OF AMERICA

THE discovery of America did not end with Christopher Columbus, it only began with him. Century by century and decade by decade foreign visitors have come to the New World to observe and comment, but in the past ten years the flood of visitors has broken all records and the volume of praise and blame has been remarkable. British industrialists, economists and journalists; Australian deputations; German trade unionists and captains of industry; French critics and littérateurs have visited the continental United States, and however much they may differ in details they are generally united in stressing certain main factors in our recent economic and social experience.

1. They point out that our natural resources are unrivalled, particularly those which are essential to modern large-scale industrialism.

2. They note that labor is relatively scarce here and that wages are relatively high. One critic cleverly says that "because American resources are abundant, they are wasted; because American labor is dear, it is economized." European writers all agree that there is a much higher standard of living here than abroad, and that this profoundly influences the American outlook.

3. With rich resources and an inadequate labor supply, we have developed labor-supplementing machine equipment and a phenomenal utilization of power. To some of our visitors this seems the chief explanation of the greater productivity of wage-earners in America and of our higher standard of living.

4. Underlying technical progress is our huge domestic market, unhampered by barriers of tariffs, languages, or local or national jealousies. It is this "mass consumption" which makes possible our mass production.

5. Scientific management in industry and commerce, called forth to meet the problem of correlating abundant resources, high priced labor, and unsurpassed machine equipment to serve the greatest of markets, is thought by many observers to be our chief contribution to economic progress.

6. Improved industrial relations in order to utilize labor and lower costs attract favorable foreign attention. Some observers regard "the achievement of industrial peace between labor, capital and management"

as one of the leading causes of American prosperity. The new union-labor policy which recognizes not the identity but the mutuality of interest between parties to the labor contract is noted, and the growing sense of social responsibility in business is also underscored.

7. "What is raising the whole standard of management in the United States is the habit among employers of discussing their problems openly among themselves, of comparing the methods of one industry with those of another, and of founding associations for research and conference. . . . They are not afraid to teach each other or too proud to learn from each other," writes one visitor.

8. Everyone emphasizes our dominant national trait of optimistic energy and our social mobility. If these are the inheritance of the frontier, our visitors note that in spite of the passing of the frontier its spirit still persists.

Historical Parallels

Many of the points stressed by our recent visitors were remarked upon by their predecessors a century or more ago. Boundless opportunities limited by labor scarcity were characteristic even of the Colonial period. Cheap land and costly labor made the American goal not the greatest production per acre but the greatest production per man. Yankee ingenuity early became proverbial; mechanical invention was general. Thus Mrs. Trollope and De Tocqueville, Captain Marryat and Charles Dickens, Herbert Spencer and Matthew Arnold were impressed with the energy and optimism of the conquerors of a continent.

If we look back over a century of our economic history, we find four previous periods of efflorescence which parallel to some extent the years since 1922. The first began about 1825, with the recovery from the great fall of prices which followed the end of the Napoleonic wars, coming to a climax in the boom of 1836 and ending in the panic of 1837. From about 1849 to the panic of 1857, with a mild recession in 1854, there were years of unprecedented prosperity. From 1879 to 1893, again with recessions, we note a third remarkable forward movement, and from 1898 to the crisis of 1907, a fourth.

The second and fourth of these prosperous periods were accompanied by new gold discoveries and rising prices; during the first period, from 1825 to 1837, prices were gradually falling, and the third, from 1879 to 1893, experienced a marked and steady drop in prices. All four recorded advances in the exploitation of natural resources, a large demand for labor, increase in real wages, and in new inventions and methods for economizing and supplementing human labor. There followed changes in marketing methods and in the credit system, in the size and complexity of business organizations and in the character of our business leadership.

Most of the eight significant features of present economic conditions on which we have found our recent visitors in agreement have characterized the former major periods of prosperity. There is a notable similarity even in the maladjustments. With vast natural resources, we have always seemed wasteful. With the reckless force with which we have conquered nature, our rate of accident and crime has been higher than in other civilized nations. We have carried to extremes the swings of business prosperity and depression. Such changes as the movement to conserve our natural resources, "safety first" to reduce accidents, and "stabilization" to steady business movements may be symptomatic of fundamental changes in our point of view.

While the chief characteristics of recent changes may find their parallel in earlier conditions, there seem now to be differences of degree which approach differences in kind. The unprecedented utilization of power and its wide dispersion by automobile and tractor, the general increase in wealth, the rise in real wages of industrial workers, the wide diffusion of investments, the emergence of the profession of management, the increasing professional spirit in business—all are noteworthy. The "self-regulation" of business, the development of trade associations, the spread of the influence of research and professional education, the strength and stability of our financial structure, the corporate development of business enterprise, and the openmindedness of the public and of the state toward this growing power of business corporations appear to be novel in our history.

Other changes are taking place. We no longer regard our natural resources as limitless. The labor of the world is no longer freely admitted to exploit them. We export instead of import capital. Our private and public interests are now world wide, and these changes must have far-reaching consequences and cause further and more perplexing adjustments.

II

THE CONSUMER AND HIS STANDARD OF LIVING

THE discovery of America by foreigners is by no means all of the continued story of what our country is and what it means. We are forever discovering ourselves. And indeed we must do this. For only by knowing what we are and what we are doing can we correct mistakes and make effective use of our opportunities. This whole volume is an enterprise of discovery—the discovery of America by Americans.

In the years since the war there has been a veritable revolution in the things which we buy and use—a revolution which has placed the neglected problems of consumption in the forefront of our economic thinking.

Much ingenuity has been used in working out measurements of the distribution of wealth and income, of ideal family budgets, of the relationship between income and commodity prices. The latter—indexes of real earnings, so called—shows surprising variations, so marked as to throw doubt on the validity of such estimates for measuring living standards. We have as yet no method for summing up individual incomes into a family income, except that of direct field studies, yet we must have figures of family income if we are to measure accurately what is taking place.

Free Income

Free income provided out of public expenditures and private endowment must also be considered, yet for these we have in general only the figures of expenditures by the state and local governments which are included in reports of the United States Bureau of the Census. In the following discussion the expenditures for education, charity, recreation, and health and sanitation alone are included.

Education not only absorbs the largest share of these social expenditures but appears to be growing at a much more rapid rate than the others. Gross expenditures for education are estimated to have grown from $750,000,000 in 1913 to 1914 to $2,750,000,000 in 1925 to 1926. Roughly, about $2,500,000,000 of the total spent on public and private education during 1925 to 1926 represents free education. Total expenditures for education increased by 250 per cent between 1913 to 1914 and 1925 to 1926. In a little more than ten years the expenditures for free college and university education increased by nearly 350 per cent.

We spent much less on libraries, exclusive of buildings. In 1926 the American Library Association estimated that expenditures were $35,347,156; in 1913 the United States Bureau of Education estimates that we spent $15,780,000.

Public expenditures for recreation in 1926 were more than $50,000,000, an increase of 146 per cent over 1913.

In the conservation of health the public expenditures of states and cities rose from $22,000,000 in 1915 to $57,000,000 in 1926, but these figures do not include all federal appropriations for sanitation and public health.

For hospitals the states and larger cities spent $144,819,000 in 1926—$106,000,000 by the states and $39,000,000 by the cities—but this amount covers a relatively small part of the total spent on free hospital service. Dr. Louis I. Dublin estimates that we spend about $500,000,000 a year for general hospitals for the physically ill, of which about $166,000,000 is for free service.

Hospital facilities have increased faster than the growth in population, and the proportion of free service has doubtless grown along with the total growth. It is interesting to note that the number of hospitals increased regularly until 1923; since then there has been a decrease in their number but the usual increase in capacity. In recent years the growth in number of beds has been about 25,000 a year.

We do not spend much public money for charity.

The known amount in 1915 was $34,000,000; in 1926 it was $58,000,000.

In 1915 we spent through the states only $108,000 on mothers' pensions. In 1926 the states and cities spent $13,000,000 on this, almost the newest, form of public social service.

For the foregoing figures we are limited in the main to the outlays by the forty-eight states and the larger cities. It seems probable that they grossly underestimate the total amount of free service as well as the rate of increase. Whatever their defects, the figures show an important item in your income and mine, and indicate a rate of increase in ten years much greater than the rate of growth of the total population or the national income. In 1915 expenditures for free services were 2.4 per cent of the estimated national income; in 1926 they were 3.4 per cent.

Economic Conditions and Health

Our attention has often been called to the connection between general economic conditions and mortality and morbidity rates. The astonishing drop in the American death rate from tuberculosis since 1917 must have some connection with improved material standards in this country. Metropolitan Life Insurance Company figures show that of white males between the ages of twenty-five and forty-four, 389.9 per 100,000 died of tuberculosis in 1917, 148.7 in 1926; 195.7 white females of the same ages died from this cause in 1917, 101.0 in 1926. White males between forty-five and sixty-four years of age died from tuberculosis at the rate of 408.4 in 1917, 198.6 in 1926; white females between the same ages, 121.6 in 1917, 67.4 in 1926.

Food

Our food habits have been changing for some time, and hence the following discussion deals mainly with general trends.

As to undernourishment, we have probably never ranked high among the nations, but we have no way to measure its prevalence. On the whole the tendency has probably been downward.

A striking trend has been the decline in our consumption of energy-producing foods, particularly in the quantities required to maintain body heat and to furnish energy for active work. There have been some changes in the food requirements for maintenance and growth, but these have not been great. The general effect of recent changes has probably been to reduce per capita food requirements, but the major influence has come from changes in the conditions of labor and the manner of living of the American people. Labor is less exposed; the mechanization of industry and agriculture means less muscular exertion; the reduction in the hours of labor since 1914 has been a factor; the general use of the automobile and the popularity of the closed car have hardly been offset by our fondness for outdoor sports; finally, both industrial and domestic housing has greatly improved, tending to conserve body heat. The only important offsetting factor has been our lighter clothing.

We cannot accurately calculate the resulting reduction in per capita food requirements, but it must have reached substantial amounts, particularly in the decade since the World War.

Important changes have taken place in our food habits. The consumption of cereals, especially wheat and corn, has declined, while the consumption of dairy products, vegetable oils, sugar, and miscellaneous vegetables and fruits has increased.

Our per capita use of cereals, notably corn meal and wheat flour, has tended downward for many years. Bread is no longer the staff of our life, and corn meal is less and less a dietary mainstay. There is nothing to suggest that the cereals will ever regain the position which they formerly held in our diet.

Dietary studies almost invariably show that the higher the family income the lower in the diet is the place of the cereals (usually the cheapest foods). While incomes have been rising and energy requirements falling, the use of wheat flour and corn meal has tended to decline. As our diet has become more diversified, the cereals have suffered in competition with cheap sugar, another carbohydrate, and with meats and other more expensive foods. Bread, extensively advertised as "the best and cheapest food," is no longer what it was a generation or more ago; it now contains a smaller proportion of wheat flour and a much larger proportion of milk, fats, sugar and other ingredients.

Meat furnishes the greater part of the proteins of the diet, and meats and animal fats furnish a large but declining proportion of the fats. The demand for meat is elastic, not only as to the total quantity purchased but as to the proportions of the different meats, the choice of cuts, and the degree of utilization. The amount of grease in garbage is said to give a fair index of the state of employment, since consumption of fats declines in hard times and rises in prosperous times.

The consumption of meats is heaviest in pioneer countries and tends to decline as new countries pass out of the frontier stage where cattle and sheep grazing is a leading industry. As agriculture becomes more intensive, the proportion of pork in the diet tends to rise while that of other meats tends to decline.

The consumption of poultry seems to have increased substantially between 1920 and 1924 but to have decreased in the years since 1924. At least in the larger cities, the demand for eggs does not appear to have kept pace with the growth of population.

Since 1920 our consumption of dairy products has tended upward. With improved breeds of cows and better selection and feeding, yields of milk per cow have risen, and milk production has increased from about 90,000,000,000 pounds in 1919 to more than 120,000,000,000 pounds in 1926. Official estimates indicate an increase of nearly fifty per cent in the total consumption and nearly one-third in the per capita consumption of fresh milk between 1919 and 1926.

Official estimates indicate an increase in consumption of milk products less marked than the increase in the consumption of fresh whole milk. Between 1919 and 1926 the consumption of butter rose about 23 per cent, of cheese about 27 per cent, of condensed and evaporated milk about 32 per cent and of ice cream about 45 per cent.

The increasing consumption of vegetable oils, which are cheap sources of fat, marks one of the most striking changes in our diet in the past half century and especially in the period since the war.

Since 1922, for example, the per capita consumption of both butter and margarin has tended upward, but another important factor is the increased use of vegetable oils as shortenings and cooking fats. We use in this country about the same quantity of vegetable cooking fats as the lard which we export. The increase in consumption of fresh fruits and vegetables in the form of salads has increased our use of salad oils.

Consumption of sugar has tended upward for many years and has risen notably since the war. Per capita averages were 79 pounds in 1909 to 1911, 88 pounds in 1912 to 1914, 80 pounds in 1916 to 1918; 100 pounds in 1920 to 1922 and 113 pounds in 1925 to 1927. In the post-war period higher incomes and the relatively low price of sugar since 1920 have contributed to increase our consumption.

The areas devoted to commercial truck crops since 1919, including early potatoes, fresh vegetables, cantaloupes, watermelons and strawberries, show a distinct increase. Most interesting and striking variations appear in our use of certain staple fruits and vegetables. We eat about the same quantities of apples, white and sweet potatoes, cabbages and onions as we did in prewar days but much more celery, spinach, lettuce, carrots and snap beans. The increase has been greater in fresh products than in dried or canned products. Lettuce, spinach, carrots and snap beans have been the record breakers in this advance. Car-lot shipments of lettuce, for example, rose from 13,788 in 1920 to 51,446 in 1928, spinach from 2,891 in 1920 to 10,573 in 1927.

Our present diet is remarkably diversified. A larger variety of foods is used, and foods formerly limited to the well to do have come more and more within the reach of everybody. From a nutritional standpoint diversification represents a gain. Public regulation and industrial developments have improved the sanitary conditions under which foods are processed and sold, and the present diet, at least in urban centers, may reasonably be judged the best in the history of the country.

But the cost of the present diet is relatively high. The changing content of the diet, its diversification, the large and increased spread between producers' prices and retail prices, the decline in the importance of home gardens, geographical specialization in production and heavier terminal charges in transportation, the expense of public regulation and improved private practices, and perhaps competitive advertising —all these things have tended to be reflected in higher food costs. Changes in household practice, too, such as the lack of storage space, the purchase of foods ready cooked, the tendency toward smaller and more numerous purchases, and, finally, the fact that an increasing proportion of the national food supply is consumed in public eating places reflect increased costs and increased convenience. In terms of gold our diet probably ranks higher than that of any other country, yet we spend a smaller percentage of our income on food than is the case in any other country.

Manufactured Goods

Drawing what seem to be reasonable inferences from recent statistics of employment and manufacturing output, we can arrive at a general notion of the trends in consumption of manufactured goods. Staple goods, such as flour, meats, cotton goods and clothing, have shown no marked increase. In tobacco there has been a notable shift in consumption, cigars, chewing and smoking tobacco showing practically no growth, while the output of cigarettes has expanded at an extraordinary rate—over twenty-five times as many being produced in 1927 as in 1899.

The output of certain types of apparel, such as millinery, lace goods and men's furnishings, has grown very rapidly, and there has been a great advance in the production of silks, rayon and knit goods and of carpets and rugs. Rayon consumption has been astounding—96,271,000 pounds in 1927, 2,120,000 in 1911.

Our use of electrical appliances has also expanded at a phenomenal rate. In 1925, for example, 450,000,000 incandescent lamps were produced in the United States, in 1914 less than 100,000,000. In 1925 the output of household electrical heating and cooking appliances was valued at $75,000,000, in 1914 it was less than $3,500,000. Electric washing machines in 1925 were valued at $61,000,000. It has been estimated that 365,000 electrical refrigerators, with a value of $82,000,000, were sold in 1927.

From a negligible figure in 1914, the value of radio apparatus produced had risen to $177,000,000 in 1925, and the annual survey of radio retailing made by the Department of Commerce showed 7,500,000 sets in use on January 1, 1928.

The real revolution in American consumption is due to the automobile. In 1910 there was an automobile to every 265 persons in the country; on July 1, 1928, there was one automobile to every 6. Production of cars and trucks in 1925, 1926 and 1928 exceeded 4,000,000 annually.

A sample study made in 1928 of the conditions under which automobiles are purchased showed that a large proportion of the current purchases of passenger automobiles is made by wage-earners or persons in the lower salaried group. Apparently these groups make substantial payments in cash. The number of laborers and artisans trading in no old cars or else trading in cheaper cars was nearly twice as great as the number turning in the same or better makes of cars. For all the groups, 38.6 per cent of the total sales were for cash and 61.4 per cent were on time.

For manufacturers, merchants, professionals and subexecutives, the number of installment sales was almost the same as the number of cash sales, while for salesmen, clerks, firemen and policemen, laborers and artisans, the ratio is more than two to one.

Housing

Since 1922 there has been unprecedented activity in building, and the volume of residential construction has increased very rapidly.

In the four years before we entered the World War, there was an average construction of 209 square feet per person added to the population. The post-war boom not only wiped out any shortage created by the war but raised the average to nearly 221 square feet. The next two years showed a low construction record, but beginning with 1922 a persistent upward movement began, and by the end of 1927 the average residential construction per person added to the population was more than 286 square feet.

The volume of construction during the war and immediately afterward apparently was not seriously below normal requirements. If we take 1916 as showing neither a deficiency nor a surplus, the accumulation above normal requirements reached 1,411,000,000 square feet of floor area in 1927—enough, at the prewar rate of 220 square feet per person, to accommodate a surplus in population of about 6,400,000. But that does not mean an oversupply, since much of the old type of housing has become obsolete and standards are constantly advancing. Estimates of the cost of residential construction indicate a substantial rise since 1923.

In 1925, according to a survey made for the General Federation of Women's Clubs, 68.3 per cent of urban homes had stationary bathtubs, and the rate of installation in recent years has been estimated to have been 1,100,000 annually.

Between 1918 and 1928 the number of residence telephones of the Bell system more than doubled, and there are at present about 11,530,000 residence telephones in the United States, or one for every 2.5 residences.

In 1913 there were only 48 wired homes per 1,000 of the non-farm population; by the end of 1927 the number was 200. The degree of electrification of American homes, exclusive of farms, had reached 80 per cent or better. It was about 20 per cent in 1913.

Water consumption per capita in selected American cities reveals interesting facts about how we live in this country. Our domestic consumption is from two to three times that of the cities of Europe. In New York City the daily per capita consumption of water in 1910, excluding industrial use, was 79.1 gallons; in 1926 it was 103.2 gallons. What is said to be the highest in the country is a daily per capita water consumption of 400 gallons in Beverly Hills, Calif., explainable by the unusually high proportion of baths, private swimming pools and spacious lawns.

The Farmer's Living Standard

A later chapter of this survey deals with the problem of agriculture. Here it is necessary only to point out that the urban and industrial and commercial prosperity of recent years has not had a counterpart on the farm.

The reduction in farm population since the war has left a smaller number of persons living on the products of farm labor, and farmers have drawn upon savings, credit and mortgage debt to protect the standards to which they had become accustomed.

The Department of Agriculture has shown that in 1925 some 38.5 per cent of our farmers lived in counties where the average value per acre of farm lands and buildings was less than $40; 61.5 per cent lived where the average value was $40 and over. Two-fifths of the farm population thus works poor land and three-fifths works good land.

Those living on low-value farms have customarily eked out their small income by hiring themselves for wages off the farm. From 1919 to 1927 those farmers had not improved their standard of living, but their standard does not appear to have suffered much of a decline.

In recent years, according to the Department of Agriculture, there has been an annual movement of about 2,000,000 from farms to cities and a return movement of considerably more than 1,000,000. Sample studies show that over one-third of those who left farms did so because they could not make ends meet through farming.

Studies of annual family consumption and expenditures, made by the Department of Agriculture in cooperation with state agricultural colleges, show significant changes in the distribution of expenditures in families of the upper three-fifths. Food and clothing are fairly constant percentages of the total budget in all regions and in all the years studied. Housing (an arbitrary estimate of 10 per cent of the value of the house) varies a good deal. The element of advancement (including education, aside from taxes, for churches, benevolences, recreation and reading) varies greatly. Average cost of the use of the automobile per family varies from $56.90 in New England to $68.70 in the South and $93.30 in the north central region. Less than one-sixth of all families reported the use of horse and buggy.

Sample studies of the two-fifths living on low-value land showed average expenditures of 498 families in the state of New York in 1924 as $1,077.60, of 300 Ohio families in 1927 as $933.

The Department of Agriculture shows that the average disposable income of the farmer derived from the farm business was high in 1919 to 1920 but very low in the two following years, a slight upward movement reaching its peak in 1925 to 1926 with a decline in 1926 to 1927 and recovery in 1927 to 1928. The "reward for labor and management," according to these studies, was $917 in 1919 to 1920, $397 in 1920 to 1921, $270 in 1921 to 1922, $440 in 1922 to 1923, $533 in 1923 to 1924, $624 in 1924 to 1925, $690 in 1925 to 1926, $636 in 1926 to 1927, $657 in 1927 to 1928.

The department also estimates the relative purchasing power of the farmer's product as 102 in 1919, 75 in 1921, 88 in 1923, 92 in 1925 and 85 in 1927, taking average prices for 1910 to 1914 as a base.

III

HOW INDUSTRY IS CHANGING

THE most superficial observer of American industry in the post-war period is struck with its size and the acceleration in its rate of growth. The increase in the importance of certain factors and the decrease in the case of others have been phenomenal. Yet the World War developed no new basic production processes. What it did was to fix attention upon the advantages of mass production and greatly to expand our industrial equipment.

Old and New Industries

Curiously enough in the last quarter of a century while handicraft industries have succumbed to factory methods, few of the industries listed in the census of 1900 have actually disappeared. More interesting is the rise of new industries and callings; some of them, like the automobile and the airplane, extensions of old trades and callings; others, like the electrical industry, having developed into what seem practically new callings. The economic significance of these new enterprises and others like them probably holds the clue to our industrial and economic future.

Production Factors

If we analyze recent changes in terms of the increase in output per worker, we shall find that a turning point in the more economical utilization of various productive factors appears to have taken place just after the end of the World War. For many of them and for a number of product groups, this favorable change has continued through 1925, the last year for which national statistics are available. There has been an increase in the physical volume of product. There has also been an extraordinary increase in productivity of the worker or of the man-hour worked. There has been an increase in primary power utilized both as to total volume and as to the amount per employee. The total amount and the proportion of power for industrial purposes which is purchased instead of self-produced has risen. The number of workers employed in manufacturing has decreased. Fixed capital assets, in manufacturing buildings, equipment and machinery, have increased. Unit prime cost (the quotient of prime cost which is the sum of labor and material costs, divided by production) has decreased. Industrial research has increased, as has the development of new manufacturing methods, new manufacturing processes, the efficiency of power-generating machinery and the utilization of material-handling machinery. Waste has been reduced in manufacturing. Materials and former waste products have been reclaimed through the development of by-products. Safety in industrial establishments has increased. Artificial illumination has developed in extent, degree and quality, and working surroundings have been improved.

Research

A questionnaire of the National Research Council sent early in 1928 to 5,000 manufacturing concerns having a commercial rating of $1,000,000 or over brought 599 replies. Of these 52 per cent reported that they carried on research as a company activity; testing laboratories are conducted by 7 per cent; 41 per cent reported no research work; 29 per cent are supporting cooperative research through trade associations, engineering societies, universities, or endowed fellowships; an additional 15 per cent are considering extension of their research activities, and 11 per cent, at present doing no research work, reported that they are considering taking it up.

The research programs showed 67 per cent devoted to improved product or service, 59 per cent to the reduction of production costs, 40 per cent to the development of new fields of application, 30 per cent to by-products and new materials, 8 per cent to new products.

Two hundred and eight establishments reported annual expenditures of $11,991,637 for research. Of these 58 per cent reported that their expenditures were increasing, 8 per cent that they were stationary, and only 5 out of the 208 establishments reported their research expenditures as decreasing.

Elimination of Waste

The persistent drive to reduce manufacturing costs and improve operating efficiency has been stimulated since 1921 by the movement to eliminate industrial waste. Simplification of product, standardization of product and reduction of wastage have characterized this movement. President Hoover, when Secretary of Commerce, estimated the savings to American manufacturers from simplified practice and the application of the findings of the report on Waste in Industry (prepared by a committee of the American Engineering Council) as upwards of $600,000,000 annually. The savings from standardization cannot be determined. The reclamation and reuse of materials and the development of commercially valuable by-products is a branch of waste elimination the results of which are also impossible to appraise. In one case, that of reclaimed rubber, savings of more than $20,000,000 were made in one year.

Power

By 1927 nearly 50 per cent of the power applied in manufacturing was furnished by electric motors operating on purchased power. Electric power is certainly making industry more mobile as regards location and is probably contributing to reduction in prime cost.

Not much can be said as to changes in the efficiency of the prime movers in manufacturing plants. New power plants make use of the most efficient equipment available, but many plants are old and operate with generally low efficiencies.

Figures mean little as to the economy of steam power in the average industrial field, because of the great demand for industrial or processing steam. Where process steam is not the determining factor, the choice usually lies between purchasing power from a steam or hydroelectric central station distributing system or using oil engines.

As to central station efficiencies, steady progress has been made in decreasing the consumption of fuel per kilowatt-hour generated. In 1928 it was 55 per cent of what it was in 1919 per unit of electrical energy generated. In one station, generating from 20,000 to 100,000 kilowatts, about 2 pounds of coal per kilowatt-hour are now used as compared with 3.5 pounds 10 years ago.

The Diesel engine, because it is the most efficient converter of heat energy and fuel into mechanical power, is the only mechanical prime mover which has increased in number of horsepower applied in manufacturing plants since 1919.

Scale of Production

The Census of Manufactures from 1914 to 1927 shows a slight advance in the number of wage-earners per establishment, a considerable advance in horsepower, and more than double the value of products per establishment.

A striking fact is the number of small establishments —nearly 90,000 in 1923 employing less than 6 wage-earners and 54,609 employing from 6 to 20. And the small establishments show no tendency to disappear. Averages, however, do not show the importance of the larger plants. The 6,582 establishments employing more than 250 wage-earners in 1923 were less than 4 per cent of all establishments, but they employed

4,500,000 wage-earners or slightly more than one-half. Using the volume of business as an indicator, the number of large establishments is slowly increasing.

Measuring our industries by the average number of wage-earners per establishment in 1925, out of 321 the figures ranged from 1.2 in the cheese industry to 1,086.9 in the rubber boot and shoe industry. While there has been a marked reduction in the number of industries included in the smallest groups, there has also been a reduction in the larger groups, those industries averaging more than 100 wage-earners per establishment falling from 77 in 1919 to 73 in 1923 and 70 in 1925.

Another interesting point is that the industries in general have tended to keep the same relative positions, measured by the number of wage-earners. The marked advances, as one would expect, have been in industries formerly low in the scale rather than those already operating under conditions of large-scale production.

Measured by the scale of production our leading industries in 1925 were much the same as those of 1914. Five-sixths of our industries showed increased horsepower in 1925 over 1924. Ranked according to horsepower per establishment, the ten leading industries of 1914 still led in 1925. Increases in horsepower and increases in the number of wage-earners usually go together.

The establishments which are not independent enterprises but are parts of larger organizations employ at least one-third of the wage-earners engaged in manufacturing and produce an even greater percentage of the total product.

Judged by income tax returns from 1918 to 1926, manufacturing appears to contain about one-half of the larger enterprises with finance second and trade third; but the number included in manufacturing has not been gaining, while trade shows a slight increase, and finance companies have more than doubled in number. The largest gain has been made in the public-service group, which includes electric light and power companies.

Mergers

As to mergers, vertical and horizontal integration have shown a decided development in the motion-picture industry, and there has been a marked tendency toward the development of chains of retail stores. Important consolidations have taken place in department stores and hotels. Railroad mergers have been attempted, but have been hampered or checked. In banking there has been a steady increase in mergers and consolidations. As shown by the annual report of the Federal Reserve Board for member banks for 1927, there were 259 in that year, 154 in

1926, 120 in 1925. Unfortunately no measure of mergers and acquisitions can be had other than the number of concerns involved.

Since 1923 we can observe a marked increase in the number of mergers and in the number of concerns involved. The trend is clearly upward. A marked cyclical fluctuation can be observed, the consolidation movement appearing more active in prosperity and declining during depressions.

Evidently styles change in mergers and acquisitions as in everything else. The oil group was especially prominent in 1920; it has since passed from the picture. The foodstuffs group has increased. A surprising increase in mergers in the textile and chemical fields took place in 1928. But the iron, steel and machinery group still leads and accounts for about one-fifth of all mergers and acquisitions in mining and manufacturing since 1919.

In the public utility field there has been a marked trend toward consolidations in recent years. Figures compiled quarterly by the *Electrical World* show that the movement toward centralization of control began in the last half of 1921, and, except for one slight setback, has continued at an increasing rate. In 1926 there were 1,029 concerns merged or acquired by other companies, and of these, 201 were plants municipally owned. In 1927, 182 municipalities sold their plants to private companies.

Cost of Production

Analyzing the relationship between the scale of production and cost of production, it is evident that there are types of industry where small-scale production is necessary—industries where the products cannot be standardized, or where the market is small, or where skilled labor is the chief element of cost. On the other hand there are many possible economies in large-scale production in spite of increased administrative machinery, supervision and control.

The Federal Trade Commission, which examined 628 plants in the baking industry covering the years 1922 to 1925, found that "costs are on the whole lower for the larger than for the smaller plants. There is some indication that plants in size a little below the largest may be somewhat lower in cost," and the Bureau of Labor Statistics, reporting in 1928 on productivity of labor in merchant blast furnaces, states that "increased stack size beyond a certain limit appears to make possible greater output only at the expense of good control of materials." These samples may not be conclusive in themselves, but they suggest that there appears at any given time to be an optimum size of plant, and that beyond that point the law of diminishing returns begins to operate.

In analyzing the results of consolidations—*i.e.,* the relation between scale of operation and cost—the Federal Trade Commission's study of the baking industry found "little to indicate that the result of combining the plants of wholesale baking companies into a single organization is a lower cost per pound of bread produced." In the case of flour milling, the commission found that "companies of medium size show slightly higher rates of profit than either the larger or the smaller companies." In companies engaged solely in crude petroleum production from 1922 to 1926, grouped according to the amount of their capital investment, the commission found that the largest companies showed the lowest average rate of return, and the next group showed the highest. The largest companies, however, were making a steady advance. In petroleum refining the results are less clear. Over the period as a whole the largest companies are exactly in the middle, the most profitable group being next to the smallest concerns and the least profitable the smallest.

Volume and Size

Census material for 1923 to 1925 showing changes in value of products and average number of wage-earners employed in identical establishments in nine industries, shows large-scale production dominant in the belting, match and lead pencil industries, but in the six other industries listed—among them carpets and rugs (wool), clocks, firearms and locomotives—the smaller concerns have fared better than the large or middle groups. It is significant to note that in eight of the nine industries (locomotives being the exception), the large concerns have gained more than the middle-sized groups.

Stock prices since 1922 show the large concerns well ahead in three cases and second in one; medium concerns at the bottom in two cases and similar to the small concerns in two. These trends may indicate that large concerns are now finding economies which the Federal Trade Commission figures of several years ago did not show; or that such concerns are taking a larger share of the nation's business; or, finally, that the belief in the advantages of size and large-scale production is reflected in the valuation of corporate securities.

Stability

As to the possible relationship of size and stability, census figures of production indicate that the industries which suffered most severely in the post-war depression were neither predominantly large nor small, and that the severity of the depression was not related to the average number of workers in the establishment, the horsepower per establishment, or the percentage of wages to total expenses.

Dr. Willford I. King ("Employment, Hours and Earnings in Prosperity and Depression") showed that cyclical fluctuations in employment were most severe in large concerns. These results do not appear consistent with stock prices or the results of investigations by the Federal Trade Commission which show, in such industries as flour milling and furniture, that the large concerns weathered the depression of 1921 more successfully, from a financial point of view, than the small ones.

Regional Changes

Sectionally the country has, of course, developed unevenly. The Census of Manufactures records an extraordinary advance in the Pacific states, a gain by the east-north-central division, and a failure of the New England states and to some extent of the middle Atlantic section to keep pace with the rest of the country. The South has rapidly grown as a manufacturing area; indeed in the last years covered by our census the three southern divisions lead in the rate of increase both in wage-earners employed and in the value added by manufacture.

The spread of branch plants has been impressive, both as a means of keeping down transportation costs and of making rush deliveries. A study by the United States Chamber of Commerce for 1927 shows 222 branch plants established in that year, more than one-half of them located beyond the boundaries of the geographical division in which the headquarters office is located. There is evidently a tendency toward more equal distribution of manufacturing activity throughout the country.

The movement of industry from city to country is also noteworthy. Between 1919 and 1925 the twenty-five largest cities lost 326,800 wage-earners, and the rural area (all area not included in communities having a population of 10,000 inhabitants) gained 55,204 wage-earners. Cities between 100,000 and 250,000 population lost even more heavily than the largest cities—14 per cent of their wage-earners—communities between 25,000 and 100,000 lost 11 per cent, and those between 10,000 and 25,000 lost 8 per cent.

Urban loss has been greatest in the middle Atlantic and east-north-central districts and the rural gain greatest in the east-north-central division.

There is also evidence that the plants in the large cities are actually decreasing in size, while establishments in the rural areas have grown remarkably.

The local concentration of industry in certain favored spots seems also to be less marked. Since 1899 slaughtering and meat packing in Chicago has more than doubled the value of its products, but from 35.6 per cent of the national total the city fell to 18.8 per cent. Philadelphia's industry of carpet and rug making more than doubled the number of its employees, but from 45.6 per cent of the national total it fell to 27.8. In a few cases there has grown up a considerable concentration in recent years, but the trend has been decidedly the other way.

Thus there has been a development of backward areas and a decline of the more highly developed areas; a development of rural areas and a decline of the cities; and finally, a lessening of local concentration in the historical centers of certain industries.

IV

CONSTRUCTION AS A BALANCE WHEEL

CONSTRUCTION has been called the balance-wheel of industry. In recent years it has reached an annual value of $7,000,000,000, yet this huge sum seems conservative in relation to the national income and savings when we compare it with prewar figures.

The annual increase in population has become much more nearly stabilized, and we, as a people, now require an annual addition of 400,000 homes as well as other structures. The net loss of the farm population to cities and towns has resulted in an unusual demand for urban dwellings; the growth in per capita income and savings has had its effect, as well as the obsolescence of existing structures; the supply of investment funds has greatly increased and until 1929, there was a generally lower trend of interest rates. Steady progress has also been made toward systematizing the nation's building program and toward a national pooling of part of the funds.

General business conditions have exerted a marked influence on the amount of new building undertaken.

This fell off strikingly in 1924 and again in 1927. It is interesting to note that the abundant credits available for construction have not resulted in an inflationary building boom—a frequent precursor to depression. Only once, in the spring of 1923, new construction was being projected so rapidly that wholesale prices of building materials began to mount. In March of that year Mr. Hoover, then Secretary of Commerce, in reply to an inquiry from the President, wrote suggesting that federal building not urgently needed be deferred for a time. In April the Report of the Committee on Business Cycles and Unemployment of the President's Conference on Unemployment, advised the deferment of public works and the construction work of large public-service corporations to less active periods, and the problem was widely discussed. Our building program was safely adjusted to the capacity of the industry, and building costs have never since been so high.

The construction work of practically all types of public utilities, such as railways, electric light and power, gas and telephone companies, is largely non-competitive and non-speculative. Industrial corporations have been able for the past five or six years to plan and finance their developments without interference from general financial conditions. In the case of residential and commercial buildings there is much more planning of a basic sort than there was before the war. City planning and zoning has advanced, and the development of the national "Federal Aid" highway system and the interconnection of electric power systems are further evidences of construction broadly planned. Intergroup and community efforts to assure seasonal and cyclical stabilization in building have encouraged owners to look ahead and to formulate long-term building programs.

Competition in building materials has been keen and research has been pushed with energy. Great savings have been effected through careful analysis of strains and stresses, wider use of specifications and better inspection. National standards of various sorts have also been promoted.

The increased durability of structures has been emphasized by giving attention to fire resistive features and the use of non-corrosive metals. The amount of treated wood doubled from 1922 to 1927. The subgrading and substructure of highways is now much more carefully prepared and the surface is made more lasting.

Labor-saving machinery has been made more adaptable and reliable and is more widely used. The development and use of the gas engine and the motor truck have been notable. The more general rental of construction machinery and equipment has tended to reduce overhead carrying costs and transportation charges.

Better Homes

The construction of single houses made a quick start in 1919 and held up better in 1920 and 1921 than the construction of apartments. The construction of one-family houses reached its peak nationally in 1925, a year prior to the peak in multifamily structures. In some cities overbuilding of houses for sale has resulted in violent curtailment of programs, such as a 50 per cent reduction from one year to the next, but the growth in demand has usually resulted in rapid recovery.

More than one-half of the apartment houses erected since the war are in the metropolitan districts of New York and Chicago.

In many cities the percentage of vacancies in run-down and undesirable dwellings, particularly in congested districts, has been mounting.

Although the percentage of home ownership declined during the decades for which records are available, the decline was less from 1910 to 1920 than before. During that decade the percentage of families owning their homes in the 68 largest cities actually increased and the figures take no account of the increase in homes owned beyond the territorial limits of the cities.

There have been many evidences of improving taste as is shown by the circulation of architectural papers and of periodicals devoted to home building, home furnishing, home equipment and landscaping.

Important shifts have taken place in the use of building materials. Perhaps the most marked single improvement is in plumbing.

Non-residential Buildings

Commercial structures, such as offices, banks, stores, warehouses and garages, form the largest single group of non-residential buildings. The construction of offices has shown the greatest fluctuations. Contracts for new industrial buildings, which consist mainly of manufacturing plants and are next in importance to commercial buildings, showed a marked recession in 1924 as compared with 1923 and in 1927 as compared with 1926.

Construction Methods and Materials

On large buildings the time required for construction is perhaps 30 or 40 per cent less than it was before the war. Reinforced concrete has become common and competes with steel for structures up to fifteen stories and even higher. The allowance of a basic working stress of 18,000 pounds per square inch instead of 16,000 pounds makes possible a saving of approximately 11 per cent in the amount of steel required in steel-frame construction.

The architects, engineers and builders who were interviewed agreed that the spread since 1913, and even since 1923, between wage rates in the building trades and material prices has not meant a corresponding increase in the ratio of labor to material costs in the construction of large buildings. The ratio of labor to material costs has not gone up perceptibly because of the use of labor-saving equipment, because less is lost on account of poor management, because of the occasional use of laborers for unskilled work which formerly was done by more highly paid craftsmen, because of the tendency to finish materials more completely before they arrive at the site and because of the use of more expensive materials at certain points in the job.

Industrial Buildings

The total construction of industrial buildings is still liable to considerable fluctuations, but since 1922 there have been no such wide swings as during the three preceding years.

Less time is required for construction without excessive payment for speed. One case is reported of a firm of engineers who built a plant of twenty buildings in 280 calendar days. Most of the structures were four stories high, of reinforced concrete, and the total cost was about $7,500,000.

Public Works and Utilities

The construction programs of public works and public utilities in the post-war period have been notable not only for their magnitude but for the marked developments which they have shown in planning, financing and technique. Instead of a spectacular reaching out into undeveloped territories, such as characterized the decades of railway building during the latter part of the nineteenth century, these have been devoted to filling in and extending facilities for transport and communication within areas already inhabited and beyond the pioneering stage. From the point of view of business stability, this change in the character of construction is important because it is planned in order to meet needs which exist or can readily be predicted, rather than needs which must be guessed at.

Road Building

Not long before the World War we were generally considered backward with respect to improved highways. The development of one of the finest systems of improved roads in the world has been effected mainly since the war. More than a billion dollars annually is now spent for the construction and maintenance of rural roads, and four hundred million dollars or more is spent by cities for street improvement and maintenance. The Federal Bureau of Public Roads in cooperation with state authorities has worked out a well coordinated network of 185,772 miles of principal roads, about one-third of which has been improved. There remains much room for better planning of highway improvements, especially in the way of cooperation between the authorities in adjoining counties and between those of cities and those of neighboring rural territory. A number of state highway departments now centralize the purchase of supplies, such as cement. There has been much more careful planning of types of surfacing and subsurfacing for the amount and character of traffic on rural roads. Several state highway departments maintain research bureaus. One result of research has been an almost universal change, effected since 1921, from the practice of having concrete road surfacing of uniform thickness to the present practice of having it thicker at the edges.

Although no new methods of cutting and filling and preparation of the subgrade have been developed within the past ten years, there have been constant improvements in the machines used for such purposes. There has also been an advance in the methods of storing and handling materials.

Labor

There has been a tendency to reduce the number of hours in the working week, although the 44-hour week was common at the beginning of 1919. The 5-day week of 40 hours is current practice in a number of cities. The general tendency of wage scales in the building trades has been upwards since 1921, but too great reliance cannot be placed on this as it may be that a raise merely recognizes increases which in practice had been in effect for some time, and in some cases we know that the nominal figures are above the level of the wages actually paid.

There has been no marked trend either away from or toward closed-shop agreements.

The building trades since 1921 have been unusually free from labor controversies.

V

RAILWAYS AND SHIPS

Railways

THE recent reorganization of American railways and the improvement in rail transportation service were characterized by President Hoover, when Secretary of Commerce, as "probably the most outstanding industrial accomplishment since the war."

From 1920 (when railway property investment was slightly in excess of twenty billion dollars) to the end of 1927, the railways made gross expenditures of nearly six billion dollars for additions and betterments of facilities and equipment—an average annual expenditure of three-quarters of a billion dollars. By reason of the more effective use of equipment, additional traffic has been handled with the same or even with less units, and orders for new locomotives and cars have been in the main for units retired.

A little more than one-third of the six billion dollars devoted to additions and betterments has been charged to operating expense or to the profit and loss surplus. In general such charges represent the original cost of property or equipment replaced or retired. Something less than two-thirds of the six billions was added to the investment account—to the excess cost of the new over the original cost of the old. Less than one-fourth of the six billions has been capitalized by the issuing of stocks or bonds. Thus, the greater part of the gross expenditures for betterments and of the net increase in investment was financed from income or surplus and has not been capitalized. This has direct bearing upon an unhealthy tendency which is apparent in the growing proportion of funded debt to total capitalization. The funded debt proportion grew from about 50 per cent in 1910 to 58 per cent in 1920 and nearly to 60 per cent in 1927.

Railway freight traffic since 1920 has tended slightly upward, the year 1926 holding the record—443,700,000,000 revenue ton miles for Class I railways. In 1927 the figure was 428,600,000,000; in 1925, 413,800,000,000; and in 1920, 410,300,000,000.

Railway passenger traffic is steadily and seriously diminishing. The loss is almost entirely in local passengers and is due mostly to the competition of motor vehicles. Long-distance passengers and commuters have been increasing slightly.

The railways are centenarians, automobiles are scarcely old enough to vote, yet the public investment in motor vehicles and hard-surfaced roads is already greater than the public investment in railways and their equipment, and the number of employees in the automotive industry and in highway transportation is greater than in the railway service.

The effect on the railways of motor-truck competition is not serious. The small-shipment, short-haul freight traffic is burdensome in its demands upon equipment and facilities, and the railways are better off when the facilities released by the loss of freight to motor trucks is employed for the long-distance bulk freight which is more attractive from the point of view of net revenues. In the passenger service, however, the loss in local passengers is narrowing the small spread between passenger revenues and passenger expenses. The greatest loss to the railways is not in the passengers taken by motor coaches but in the greater use of the private automobile as a substitute for railway transportation. Some railways are now entering the motor-coach field.

After the Transportation Act was passed in 1920, the Interstate Commerce Commission authorized rate increases which were intended to yield a 6 per cent return on railway property value. Heavy increases in rates did not yield 6 per cent as the 1921 traffic fell off sharply. Traffic originating since 1921 has increased about one-third; the average revenue per ton mile in 1921 was 1.275 cents and in 1927 and 1928 1.080 cents.

Although the net railway operating income increased from $600,000,000 to over $1,000,000,000 between 1921 and 1927, it still remained less than 6 per cent on property value. The commission has apparently given less attention to the relation between rates as a whole and fair return than to the downward adjustment of specific rates, notably on agricultural products.

When the railways were restored to private operation after the war, employee morale was seriously impaired. Relations were further strained by wage reductions in 1921 and 1922 and the service was adversely affected by a nation-wide strike of shopmen in 1922 and 1923. Since the Board of Mediation was set up in 1926, there have been no serious labor troubles. The freedom from friction may be attributed in part to wage advances. The average wages per hour and per year, while less than those of the war period, have been gradually increasing since 1923, and the employee morale has improved. The traffic units per man hour were 17 per cent greater in 1926 than in 1920 and 10 per cent greater than in 1923, but the major part of the gain is attributed to improved facilities and equipment.

The most notable achievement in railroad administration since the war has been the marked increase in the efficiency with which the equipment has been utilized and trains operated. The car miles per day have been increased from 25.1 in 1920 to 30.3 in 1926 and the ton miles per car day from 498 to 518. Through better administration of material and supplies held for use in maintenance, operation and construction, the savings in carrying charges in 1926 in comparison with 1920 were about $32,000,000. Lower prices, of course, contributed substantially to this result.

From the point of view of the railways, the only important unfavorable element in the present situation is the low net return on investment values. The Interstate Commerce Commission has defined a fair return as 5¾ per cent on the value, but in no year since the law was enacted in 1920 have the railways earned that return. On the book value plus working capital in cash and material held for use, the net return in operating income was 2.9 per cent in 1921 with a gradually increasing rate up to 4.8 per cent in 1925 and 5.2 per cent in 1926 the year of greatest freight volume and greatest gross revenues. In 1927, with slightly less traffic, the return was but 4.5 per cent, and for the first half of 1928 it was at the rate of 4.7 per cent. Unless there is an increase in the rate of return there is likelihood, if not virtual certainty, that the railways, with growing freight traffic, will be unable to keep up the past and current programs of betterments and that the present high grade of service will not be maintained.

Little progress toward consolidations has been made. The Interstate Commerce Commission has never published a consolidation plan. An amendment to the law, proposing a period in which consolidations believed by the commission to be in the public interest may be effected voluntarily without regard to a final comprehensive plan, was favorably considered by Congress early in 1928 but was crowded off the calendar.

From the public's point of view, the outstanding railway development since the war has been the marked improvement in transportation service. The improvement is seen in freedom from car shortages, embargoes and other restrictions, and in close adherence to schedules. This regularity of movement and dependability in rail service has given impetus to the general practice among manufacturers and merchants of carrying smaller inventories of raw materials and merchandise. The general reduction in inventories has released sums of capital which in the aggregate are enormous and has brought about profound changes in buying habits which are far reaching in their effects.

Shipping

In recent years the world's shipping industry has had to contend with the worst surplus of tonnage it has ever known. World tonnage was 36 per cent greater in 1923 than in 1914, while estimates of ocean-borne trade in 1923 showed that it was then only about 80 to 85 per cent of the prewar figure. Today the real surplus of tonnage is probably about 3 per cent, largely made up of types which are rapidly becoming obsolete and unusable.

The decline in charter rates has been almost uninterrupted, the exception being 1926 when the British coal strike caused an unusual demand for tramp tonnage, and yet ship operating expenses are probably nearer 100 per cent above prewar than 50 per cent.

On the other hand, four-fifths of the transoceanic shipping of the world is now operated on regular routes as contrasted with less than two-thirds before the war. The picturesque tramp ship is disappearing, although its influence upon rates and stability is not to be underrated.

By 1928 a slight demand for new tonnage had appeared. Over half of the shipping now on order is to be equipped with Diesel engines. The shipbuilding industry of the world is still depressed. Oil-burning steamers have greatly increased, from 1,300,000 tons in 1914 to 19,053,000 tons in 1928. Coal-burning ships now comprise only 61 per cent of the world's total as compared with 89 per cent in 1914, but recent tests with pulverized coal may again cause the trend to change. There was an increase of tanker tonnage from 1,479,000 tons in 1914 to 5,161,000 tons in 1923 and a further increase to 6,544,000 tons in 1928.

From 12,400,000 tons in 1923 American shipping has declined to 10,900,000 tons in 1928, while world tonnage has been increasing; 2,978,000 tons registered under the American flag were idle on Jan. 1, 1928. Of the steam seagoing shipping of this country in 1923, 58 per cent was government owned. On Jan. 1, 1928, this tonnage made up 42 per cent of our merchant fleet. The liquidation through sales to private owners of the shipping operations of the United States Shipping Board now centers largely in the Jones-White Shipping Act, passed early in 1928, calling for mail subventions, government loans to American shipping companies and the sale of government lines. The unwillingness of the Shipping Board to scrap useless tonnage and its willingness to break out tied-up ships when rates rise, as in the case of the British coal strike in 1926, have acted as a drag on shipping rates.

The Panama Canal has had a profound effect on American shipping. Our ships in this coastwise trade are not handicapped by competition with low-cost foreign ships and with seamen of lower standards of living. Some of our finest ships are engaged in this protected trade and constitute a good naval reserve. Replacement and additions to the tonnage in the intercoastal trade will continue to provide a backlog of work for our shipyards, since only American-built vessels can engage in it.

This trade has had far-reaching influence on channels of our domestic trade and on the localization of industry. Cargo has been diverted from the transcontinental railroads at a time when their earnings were low. It cannot be argued that intercoastal shipments were a large factor, but any division of shipments must have had its effect. For example, an Ohio shipper can send goods to the Pacific Coast as cheaply by rail eastward and then by steamer westward through the Panama Canal as he can by the all-rail route westward.

This shift has brought up the question of water rates in the intercoastal trade, and government regulation may result.

VI

CHANGES IN MARKETING

RECENT changes in marketing have been as notable as the changes in manufacturing and transportation and have meant quite as much to the community.

One of the principal changes has been in consumer demand. New types of products have appeared, improved types of old products have been effected, the tastes and desires of consumers have shifted, increased purchasing power has been an important factor, and there have been profound modifications of what may be called our "tempo" of living.

Within a few years the radio has come upon the market, furnishing the farmer with news and crop information and helping to break down the differences between the wants and interests of rural and urban dwellers. Airplanes have been produced on a commercial basis. The demand for automobiles has been felt in thousands of directions. Oil-burning and gas furnaces have become popular, affecting the market for anthracite coal in the northeastern states. Electrical appliances for the household have increased prodigiously. The popularity of furs and fur-trimmed garments, short skirts, silk hosiery and novelty types of shoes has brought sudden shifts in industry. Rayon has played an important part. Basic changes in diet also have taken place, and such shifts as that from home baking to commercial baking have gained headway.

Still other changes in demand are the increased use of automobile accessories, the new demand for cigarette lighters and propeller pencils, the popularity of card matches, the more prevalent use of soft collars by men, the purchase of golf supplies and the shift in demand from the old-style timepieces to wrist and bracelet watches. In the industrial field the introduction of new alloys, a large market for buses, the introduction of paint-spraying machinery and similar devices have occurred.

These changes in demand have come quickly and, since the bulk of the product in many industries comes from large scale, specialized plants which cannot suddenly shift their output, there has been a good deal of painful readjustment.

Changing demands and hand-to-mouth buying have put a premium on what is coming to be called "merchandising." The business troubles of many companies can be traced to poor merchandising, that is, to failure to understand market requirements both qualitatively and quantitatively.

The new tempo of demand, the rapidity of style changes and the receptivity of consumers to new varieties and types of products represent a reaction against widespread standardization of products.

Trading Areas

There have been marked shifts of trade in certain lines away from the cross-roads store and the small-town store to stores located at county seats or other larger trade centers. Some countershifts have occurred, such as the growth of suburban department stores near big cities and a marked increase in the number of roadside stands and gasoline filling stations.

Until we have a general census of distribution, the full measure of change in retail trading areas cannot be determined, but the Harvard Bureau of Business Research has noted the shift of trade in dry goods from general merchandise stores in towns and villages to county seats and cities of medium size; the University of Nebraska found in the towns of that state fewer general merchandise stores, more groceries, little change in the number of meat stores, hardware stores, farm implement establishments, or lumber dealers and a decrease—particularly marked since 1917—in harness shops, jewelry stores, dry goods and women's apparel stores and shoe stores. Sample studies in other parts of the country indicate similar conclusions. For example, a "Commercial Survey of the Southeast" by the United States Department of Commerce, in 1927, states that the shift of trade from county districts to the larger trading centers was common in the Southeast, the trading radii of some cities being 100 miles.

Reports indicate that these changes have been accelerated since 1920. The goods most affected are those where fashion rules, particularly woman's apparel; but the trade in dry goods, toilet articles, jewelry, furniture, men's clothing and shoes has also tended to shift to the larger centers. The grocery trade has been less affected.

Commercial banking has felt the effect of this shift in trading areas, and moving-picture theatres, while one of the causes for the shift in trade, have also been influenced by it.

The primary causes for these shifts have been the increased use of automobiles and the construction of good roads, supplemented by the popularity of moving pictures and by radio broadcasting. The spread of rural free delivery of mail also has contributed. In the south the shift in trade has been influenced substantially by the decline in the amount of credit extended by lien merchants who made loans to the farmers on their growing crops.

The average trading area for rural and suburban consumers has been increased by the automobile from

5 or 6 miles to a maximum of nearly 150 miles, and this change is still going on. The percentage of roads surfaced in various sections of the country and the number of passenger-car registrations plainly show that the new means of transportation has not reached its highest development.

At county seats and similar trading centers there has been an apparent tendency toward increasing specialization among retailers. Chain-store development has proceeded, but the greatest development in this direction probably remains for the future. These changes have worked against the sale of merchandise by mail and are the reason for the chain-store developments sponsored by the mail-order houses.

A branch of industry very seriously affected is wholesaling. Relatively few wholesale firms have as yet readjusted their methods to deal with the new conditions.

Hand-to-mouth Buying

Hand-to-mouth buying is not new. Trade reports for 1872, 1874, 1896 and 1914 show the prevalence of this practice in earlier periods of price uncertainty and changes in style.

Data published in the "Survey of Current Business," giving a comparison of changes in average monthly unfilled orders with changes in the volume of business handled, show an increase in advance orders when unfilled orders increased more rapidly than the volume of business. When the reverse was true, an increase in hand-to-mouth buying was evident. For a group of miscellaneous industries, it appears that hand-to-mouth buying became more common after 1923 in a majority of the industries, but to varying degrees; in the steel industry there was a tendency toward more hand-to-mouth buying; in the textile industry there was hand-to-mouth buying and a demand for prompt deliveries; in the shoe trade after 1920 hand-to-mouth buying became very common; and there was a decline in forward buying in tanning, hardware, the household paint and the canned goods industries. On the other hand in the women's garment industry, in the trade of perishable food products, orders always have been placed for immediate delivery and there has been no change in recent years.

Manufacturers of such products as cement, newsprint paper, packing boxes, paper-mill machinery and machine tools report little change in buying methods. In the men's clothing industry a small decline in forward ordering and some increase in mail orders were reported. In the wholesale trades varying conditions were reported, just as in manufacturing.

It is apparent that only a portion of the industries in the United States have been affected by hand-to-mouth buying. Its effects have been to change production conditions and methods in certain industries and to modify sales methods. In some instances the production peaks of manufacture are said to have been leveled; in others the irregularity of operations has been increased.

The decline in advance ordering has made it necessary to send salesmen over their territories more frequently than before 1922. Some manufacturers have opened branch warehouses at which stocks are carried for immediate delivery. Such action has tended to increase inventories carried by those manufacturers. Changes in inventories as a result of hand-to-mouth buying have varied widely between different manufacturing industries. The net effects on the aggregate merchandise inventories carried by American manufacturers, wholesalers and retailers are problematical. Such savings in inventory as have occurred have been partially offset by increased expenses for selling, buying and handling. On the other hand the increase in the frequency of style changes and the increase in the variety of items offered for sale would no doubt have heavily increased the inventory costs of manufacturers and merchants if they had not purchased from hand-to-mouth their supplies of materials and merchandise. Hand-to-mouth buying has been in a considerable measure a means of insurance against rising costs. In the case of staple merchandise, hand-to-mouth buying has represented efforts on the part of buyers to shift the risk of price changes back to the seller.

Changes in Distribution

An example of the changes in distribution of industrial goods is afforded by the chemical industry, where various manufacturers since 1918 have dispensed with brokers and dealers and sell their products directly to users. In other trades manufacturers have replaced their distributors by opening their own branches; still others have replaced branches by distributors. Methods of distribution in many trades have been highly unsettled without any indication as yet of what the trend is to be.

Figures of the Federal Reserve Board show a large increase in sales of chain-store companies dealing in groceries, five- and ten-cent merchandise, wearing apparel, drugs, cigars, cigarettes and candy. A rapid increase in these sales occurred after 1922. Chain-store sales, as shown by the Census of Distribution in eleven cities in 1926, amounted to 30.66 per cent of the total retail trade in Atlanta, 22.44 per cent in Baltimore and 37.13 per cent in Chicago.

In the grocery trade the growth of chain stores has been particularly rapid. In the drug trade, chain-store companies are not so large individually as in the grocery trade, and as yet they do not handle quite so large a proportion of the total business in their trade. The chain companies operating candy stores did not expand as rapidly during this period. Two large chains of tobacco stores now have a controlling interest in two chains of candy stores and have united to organize and operate a chain of variety stores. In the department store field there are several companies operating chain stores. In the sale of gasoline and oil, shoes, dairy products, millinery, furniture and house furnishings, the chain stores are active. Few, if any, developments in the marketing field since 1922 are as significant as the advance of the chain store.

In the shoe and clothing trades, chain-store companies generally have not had a substantial advantage over unit stores in operating expenses. The growth of chains in those trades, therefore, has been occasioned by causes different from those which led to the growth of the grocery, drug and variety chains. In several instances manufacturers were impelled to operate chains of shoe or clothing stores to counteract the influence on their plant operations of hand-to-mouth buying or to prevent obstruction to the flow of merchandise from their factories to consumers. Some chains were formed to exploit the sale of low-priced merchandise. An external influence in various trades has been the influx of new capital, as a result of the activities of investment bankers in promoting the sale of chain-store securities. This was particularly noticeable in 1926 and 1927.

Some of the chief problems arising from the large-scale operation of retail stores remain to be faced, such as the development of concentrated purchasing power leading to a demand for concessions of various sorts from the manufacturers. Prior to 1928 there had been no widespread change in the operating methods of unit stores as a means of meeting chain-store competition.

The chain store represents a standardization of merchandise and of operating methods with a large number of small units operating under centralized control. A department store, in contrast, comprises a large number of widely diverse departments brought together under one roof, where style goods and novelties are predominant. Hence, prior to 1928, there had not been much competition between department stores and chain stores. The increase in volume of sales of department stores, however, has been far less rapid than the increase in sales of chain stores.

The mail-order companies experienced a particularly severe decline in the volume of their sales in 1921, from which they had not fully recovered at the end of 1924. This illustrates a difficulty from which mail-order houses always suffer, when prices are rapidly declining. Since 1924 the mail-order companies have shown a more rapid expansion of sales than the department stores, as a result of the entry of mail-order companies into chain-store operations.

The grocery and dry-goods wholesalers have tended to lose ground in the past ten years; the hardware wholesalers have barely held their own; the drug wholesalers show a marked increase in sales volume. The figures do not give a complete picture, as they do not include the number of wholesale firms which went out of business. Since 1920 the wholesalers have been handling a smaller proportion of the trade in their respective lines. In general, wholesalers have not been alert in meeting the new merchandise conditions.

Cooperative Marketing

One of the slogans of those most interested in promoting the cooperative marketing of agricultural products has been "orderly marketing." The records of the years from 1922 to 1927 do not indicate substantial accomplishments on the part of most large-scale cooperative enterprises, and the doctrine that the marketing of staple agricultural commodities by private firms is disorderly has not been proved. The theory behind the demand for orderly marketing is that prices are depressed by having a crop come on the market in large quantities during a short season of the year. No conclusive evidence has been found that this is the case, nor is it reasonable to expect prices to be depressed during the period of heavy crop movement. As a result, those large cooperative associations which have focused their attention chiefly upon withholding particular raw materials from the market in the hope of securing better prices later have had little success and, as in the case of various tobacco growers' associations, have sometimes experienced embarrassment.

Large-scale enterprises in cooperative marketing have been successful when they have been able to effect real economies in distribution or where they have applied constructive methods of merchandising and sales promotion. It is by these methods rather than by efforts at valorization that large-scale cooperative enterprises have prospered.

Since 1925 it seems doubtful if there has been any substantial net increase in the number of farmers' cooperative associations. In that year there were 3,338 grain cooperatives, 2,197 in dairy products, 1,770 in livestock, 1,237 in fruits and vegetables, 121 in cotton, 24 in tobacco, 71 in poultry products, 39 in nuts, 91 in wool, with an estimated membership of more than 2,250,000 persons.

The United States Department of Agriculture estimated that approximately 11,000,000,000 pounds of fluid milk were marketed through cooperative associations in 1927, nearly one-fifth of the supply used for household purposes in that year.

The fruit industry furnishes outstanding examples of successful cooperatives. Sales of the California Fruit Growers Exchange, for example, grew from $55,271,975 in 1923 to $85,295,840 in 1927. In the latter year its expenditures for advertising and sales promotion amounted to about $700,000.

There are more farmers' cooperative associations in the grain trade than in any other trade, and their sales make up the largest aggregate volume among the cooperative groups. Estimated sales of 3,300 farmers' elevators in 1926 to 1927 were: 213,000,000 bushels of wheat, 152,500,000 bushels of corn, 98,500,000 bushels of oats, 16,500,000 bushels of barley, 9,000,000 bushels of flax, 8,500,000 bushels of rye and 2,000,000 bushels of other grains. The total cooperative sales of wheat were about 27.7 per cent of the total wheat produced in the United States in 1926, about 26.3 per cent of the corn, 35.9 per cent of the oats, 20.8 per cent of the rye, 29.5 per cent of the barley, 46.5 per cent of the flax and about 33 per cent of the total of all grains.

In the livestock trade there are about 4,500 cooperative shipping associations in the United States. In 1927 the Department of Agriculture found that 1,980 local associations handled $239,891,000 worth of livestock. Terminal cooperative sales agencies have grown notably in the last few years, 25 of them operating in 19 terminal markets in 1926.

A decline in the percentage of the crop handled by cotton cooperatives occurred in every state except Louisiana in 1926 to 1927. The wool handled by cooperative associations in the United States increased from 10,558,283 pounds in 1922 to approximately

25,611,055 pounds in 1926, followed by a decline to 15,755,305 pounds in 1927. In 1921 to 1922 the large-scale tobacco marketing associations handled 12.1 per cent of the crop, in 1922 to 1923, 48.8 per cent, in 1923 to 1924, 46.2 per cent and in 1924 to 1925, 34.3 per cent.

Installment Selling

Milan V. Ayres in 1926 and Prof. Edwin R. A. Seligman in 1927 published estimates of the volume of installment sales. Using their figures, with a check on some of the items, it seems probable that installment sales amounted to a little more than 13 per cent of total retail sales in 1925 and a smaller percentage of the total in 1926 and 1927. It should be pointed out that installment payments have long predominated in the purchase of pianos and sewing machines; for many years substantial quantities of furniture and jewelry have been sold on installments, and in the farm machinery business installment sales have long been substantial in volume. Automobiles, radio sets, washing machines, vacuum cleaners and mechanical refrigerators fall into the same class.

The primary cause for changes in the volume of business in these trades lies not in installment selling so much as in the sums spent for advertising and sales promotion.

With the rapid increase in the number of finance companies, a factor was injected into the situation which helps to explain the attention which has been recently directed toward installment selling. In 1923 the volume of installment sales of automobiles was tending to slacken, or at all events the finance companies could not readily secure so large a volume of notes as they desired to purchase. Hence, the terms with respect to down payments and length of the installment period were relaxed in selling automobiles, and the finance companies, casting around for business, sought to induce the manufacturers of other products to utilize the installment method.

Advertising

A rough estimate of advertising expenditures for all purposes in 1927 is $1,502,000,000.

For the United States as a whole the increases in newspaper advertising rates from 1921 to 1927 correspond closely to the changes in circulation. The Bureau of Advertising of the American Newspaper Publishers' Association estimated the total expenditures in 1927 for newspaper advertising in the United States as $690,000,000. Magazine advertising in the same year was about $210,000,000, direct advertising was about $400,000,000, outdoor advertising approximately $75,-

000,000, street car cards about $20,000,000 and radio approximately $7,000,000.

The use of radio broadcasting for advertising purposes has been one of the strongest influences toward the rapid expansion of the radio industry since 1922.

Advertising expenditures in business papers in 1927 were about $75,000,000, and in other mediums, such as premiums, programs and directories, about $25,000,000.

Missionary salesmen are another form of sales promotion. In 1928 it was stated, on good authority, that about $60,000,000 a year was spent by grocery manufacturers alone for missionary salesmen. In 1927 the expenditure for this type of promotion in the United States probably amounted to $150,000,000, but expenditures were beginning to decline because of doubt as to their effectiveness in contrast to the cost.

The bulk of advertising by manufacturers in daily newspapers in 1927, classified by commodity groups, ran as follows: (1) automobiles, (2) toilet articles and medicinal preparations, (3) food, groceries and beverages, (4) cigars, cigarettes and tobacco. These constituted 60.5 per cent of the total national advertising in newspapers in 49 cities.

Magazine advertising has been one of the great stimulants to the growth of the radio business and of the electrical refrigerator business. A wide difference of opinion exists regarding the quality of current automotive advertising. Nevertheless, the industry is one of the heaviest users of magazine space as well as newspaper space and other mediums.

"Truth in advertising" has advanced. From the managerial standpoint there has been a steady tendency toward more careful and more intelligent planning of advertising campaigns aided by the Audit Bureau of Circulations and by the research work of the advertising associations.

VII

HOW LABOR IS FARING

SINCE 1920 the most striking changes in the supply of labor in the United States have been associated with our policy of immigration restriction, the growth of industry in the South and the falling birth and mortality rates. Some of these factors tend to produce a tighter labor situation, but compensating influences, such as the opening of unworked industrial areas and the progressive fall in mortality rates, may act as mitigating factors.

In the prewar period our net annual gain from recorded immigrants was 664,000, in the war and the early post-war period it was 179,000, in the quota period 312,000, so that we now receive each year about half the number of immigrants which came in before the World War. Clandestine immigration, estimated to have averaged about 85,000 a year during the 6 years of quota restriction, is now believed to be diminishing.

Wage Rates

Wage rates are the most useful measure of the changing position of labor. Nearly all available series are defective, but a general comparison may be instructive. Full-time weekly earnings increased 58 per cent from 1917 to 1920, fell 23 per cent from 1920 to 1922, and in 1927 were 16.8 per cent below 1920. Average hourly earnings in 42 industries were approximately 54 cents in each year since 1923. A table of hourly earnings in selected industries shows that increases in wages in the boot and shoe industry lagged from 1913 to 1926; that both cotton goods and woolens and worsteds hardly recovered from the low of 1922; and that iron and steel, on the other hand, had a rise of 13 cents an hour.

In the building industry, which is more than 50 per cent unionized, union rates of wages show an almost uninterrupted rise since 1914. There are wide geographical divergencies in the union rates in the building industry, the high rate being sometimes twice the low rate.

An index number of union hourly rates of wages for all reporting trades prepared by the United States Bureau of Labor Statistics follows much the same course as that taken by union rates in the building trades. The striking feature of this tabulation, as indeed of the index number of all union rates, is the very slight decline in rates during the severe depression from 1920 to 1922 and the decided upward movement since 1922.

Figures for common labor show differences between the high and low rate as large as 80 cents an hour. The belief that the differentials between the wage rates of skilled and unskilled labor or between high- and low-paid labor have been appreciably reduced since 1914 is only partially supported by the available facts. The margins between the wage rates of skilled and unskilled labor narrowed considerably from 1914 to 1920 and then tended to widen but were left somewhat narrower in 1927 than they were before the war.

In the bituminous coal industry wages are lower now than they were in 1926. In anthracite the movement of wage rates shows none of the vagaries of the confused and demoralized soft-coal industry. Hourly rates for all workers excluding contract miners' laborers in 1927 stood 194 per cent above the hourly rate in June, 1914.

Hours and Costs

In manufacturing industries from 1914 to the present there has been a reduction in the nominal work week of about five hours and the prevailing hours of labor are now around fifty a week. The union full-time week is nearly four hours less than in 1914, and it started in that year much below the nominal week in all manufacturing industries. In the building industry the union nominal week seems to be about two hours less than in 1914 and, as a result of the 40-hour movement, is still falling. A good part of the building trades was already on a 44-hour basis in 1914, so that the reduction in their nominal week has been slower than for others. The largest reduction in hours seems to have been in the iron and steel industry.

Since 1922 it seems likely that labor cost has continued to fall through further reductions in the rates of wages, but that earnings have been sustained by increased per capita output.

Productivity

It is impossible to fix the relative influence on productivity of such fundamental factors as the education and skill of the workers, the growth of capital and use of machinery, the alertness and ingenuity of management and the state of science. Over shorter periods of time, accidental or abnormal factors may intrude, such as sudden changes in the length of the work week or inefficiency arising from various causes. We cannot appraise these things, but we can generalize from reasonable hypotheses and common knowledge.

Using census figures and indexes prepared by the Harvard Economic Committee and the Federal Reserve Board, we may build up an index of production of manufactures. Dr. E. Dana Durand has prepared a similar index of agricultural and mineral production and of railway performance.

From 1899 to 1925 the physical volume of production of our farms, factories, mines and railways increased by 136 per cent, while the population grew by about 50 per cent. Production per capita is thus nearly 60 per cent greater than it was at the end of the nineteenth century. The output per worker directly engaged in production increased 76 per cent, 18 per cent in the first and second decades and 27 per cent from 1919 to 1925.

The most striking increase in productivity in the post-war period was in manufacturing. A startling change came in 1922, when output per person increased 20 per cent. In 1923 there was a further rise of 3 per cent, in 1924 no change, in 1925 another increase of 9 per cent. The total increases in the 4 years since 1921 amounted to more than 35 per cent. In 1926 and 1927 changes were slight.

It is interesting in this connection to note that the amount of primary horsepower installed in factories showed a relatively smaller increase between 1919 and 1925 than in any previous census period and that the expansion from 1923 to 1925 was not unusual. The record of machinery production for the same periods likewise fails to show any noteworthy increases.

Employment and Unemployment

Monthly fluctuations of employment and payrolls in factories and on railroads show that the income of factory workers dropped 42 per cent from its high point in March, 1920, to its low point in January, 1922, while employment declined 31 per cent from a high point in March, 1920, to a low point in July, 1921. Thereafter, both curves move within a much narrower range. Employment dropped 14 per cent from the high point in May and June, 1923, to a low point in July, 1924, and again about 8 per cent from about the middle of 1926 to early 1928.

Comparisons of the prewar and post-war course of employment in manufacturing industries show no startling difference between the normal stability of employment before the war and the condition after the collapse in 1920.

Measures of labor turnover in manufacturing industries available for the period since 1919, but not for the prewar period, confirm the impression of stability shown by the index of employment and income. Since 1921 and particularly since 1923, both the hiring rates and the layoff rates have fluctuated much less violently than in the first part of the post-war period. Figures published by the National Industrial Conference Board for more than twenty representative manufacturing industries showing average per capita full-time hours per week and average per capita hours actually worked make it possible to measure what may be called "unemployment within employment": 5.7 in 1920, 10.4 in 1921, 3.6 in 1922, 3.3 in 1923, 6.6 in 1924, 4.8 in 1925, 5.2 in 1926 and 5.1 in 1927. This gives an impression of greater stability than was to have been expected.

The lack of any machinery for compulsory registration of the unemployed makes difficult a determination of the amount of unemployment. Thus our figures may be said to measure not unemployment but the shrinkage in employment.

By taking the difference between the number of persons actully employed and the number desiring and habitually dependent upon employment, we can derive an estimated average annual unemployment. It is probably a minimum estimate. The most interesting and probably one of the most important changes in employment since the war has been the expansion in non-industrial employment. Leaving out the agricultural unemployed, it appears that unemployment in 1927 was less than half that in 1921 and considerably below 1922. The depression of 1927 measured by the volume of unemployment appears not to have been so severe as the recession in 1924. Throughout the whole period it is surprising to find a persistent and large volume of unemployment even in the very active years, 1920, 1923 and 1926.

The estimate, in thousands, in tabular form, follows:

	1920	1921	1922	1923	1924	1925	1926	1927
Total employees attached to non-agricultural pursuits	27,558	27,989	28,505	29,293	30,234	30,941	31,808	32,695
Minimum number of unemployed:								
Manufacturing	487	2,554	1,761	432	924	578	552	727
Construction	230	248	230	220	350	345	280	422
Transportation and communication	170	598	580	251	340	184	144	152
Mines, quarries, oil wells	274	470	520	329	326	308	323	380
Public service, mercantile, miscellaneous	240	400	350	300	375	360	370	374
Minimum total unemployed	1,401	4,270	3,441	1,532	2,315	1,775	1,669	2,055

Organized Labor

As matters now stand the organized labor movement in the United States has about one million more members than it had in 1913, almost exclusively represented by gains in non-manufacturing industries. In the period since 1920 it is probable that about one-fifth of all American wage-earners, excluding agricultural labor, were organized. Organization in the building trades and transportation has probably grown to nearly 50 per cent. In coal mining, on the other hand, it has dropped from about 50 per cent in 1920 to well below 40 per cent in 1927, and, in the general category of manufacturing industries, it has fallen from a bit more than one-fifth in 1920 to about one-sixth at the present time. Substantial organization among women exists only in the clothing industry and among the railway clerks.

Since 1920 the position of the transportation and building unions has become increasingly important. In 1927 these two groups represented one-half of the total membership of the American labor movement, and they are likely to improve their position. It is interesting to observe that American unions, in the main, have grown in those industries where the conditions of business competition are quite different from those prevailing in manufacturing and coal mining.

Union-labor policy is now much more preoccupied with problems of production, as shown by the various experiments in cooperation and the relaxation of the traditional trade-union attitude toward the introduction of machinery. The American Federation of Labor has initiated the doctrine that wages should rise proportionately with the increased productivity of labor. Organized labor is also more preoccupied with the problem of unemployment and has demanded the progressive shortening of the work week and the acceptance by industry of its responsibility for labor displaced by improved machinery and methods. Unemployment reserve funds of various sorts have been set up, usually joint contributions of manufacturers and workers or contributions of the manufacturer alone. Unions have shown an inclination to engage in such enterprises as banking and life and health insurance.

Company unions, so called, set up by employers, have grown rapidly since the war and now claim more than one million members.

The present income of wage-earning and lower-salaried groups from insurance must be more than one billion dollars a year. The widening ownership of corporate stocks has also been an important tendency, particularly since 1920.

The years since 1922 have been remarkably free from upheavals in industrial relations and the major disputes have been localized in the coal, textile and clothing industries.

VIII

CHANGES IN MANAGEMENT

IF we analyze prevailing practices in American management, it is evident that a growing number of business men feel a decided sense of responsibility to their organization, to its investors and to its customers. Toward employees there is less feeling of responsibility; yet there is some. A large majority of the companies studied intended to work for progress in the next few years through perfection of physical facilities; 20 per cent included in their plans the bettering of the skill and morale of the employees.

A more scientific attitude toward business problems is evident, and the influence of business publications and business associations is highly important. Today there seems every opportunity for the wholesome development of business management into a great profession.

Organization

Today there is a definite trend toward the functional type of business organization. The size of the company or the nature of its work bears little relation to the extent of its functionalization. An important by-product has been found in the chance which functional organization offers for making fuller use of the widely ranging aptitudes of executives. A number of men too one sided to make good line executives have been able to do excellent work in functional or staff positions.

Organized research in the material sciences received a tremendous impetus during the World War and much support during the days of excess profits taxation which followed. There are now company, joint, consulting and trade-association laboratories along with cooperating research services in the universities. Even pure science research, formerly thought uncommercial, is now supported by a few American concerns. Since 1921 there has been research into those business processes which are more subject to human than to mechanical influence, and out of this has grown departments of methods research, statistical research and market analysis.

The use of the formal and informal conference as a coordinative device is widespread. There seems to be less use of committees in very large and very small companies than in those of medium size.

The man who can lead rather than domineer is now chiefly desired in executive positions. In discussions of business leadership emphasis is laid upon the need of men who can avoid rather than meet emergencies and of men who can delegate authority and get other men to exercise independent judgment. The newcomers into each managerial grade appear to come from outside the organization rather more often than one would expect who knows how common is the phrase "promotion from the ranks," but a majority still come from within.

Organization charts are maintained by relatively few companies and fewer still keep them up to date. Careful job specifications, including the beginnings of a description of working relationships between jobs, seem to be taking the place which the charts once held as an aid to organization building.

In general there is a striking lack of relation between the size of a business and the methods used to operate it. The dominating "one-man" control is to be found in one of the very large organizations of the country; the highly decentralized, functionalized and coordinated forms are to be found in relatively small companies.

In business planning, the financial rather than the structural aspect has held the center of attention. Budgets have made extraordinary progress in the business world since 1921. They have come in more rapidly than any other management device of parallel complexity.

There are only a few banks in the United States which are as yet paying much attention to the budgets of the companies which borrow from them. In fact the interest in and influence of commercial banks upon practices of business management do not seem to be as strong as might have been expected.

Management in Manufacturing

Most manufacturing companies have a sharply differentiated purchasing department with full and elaborate purchase records. On account of the growing emphasis upon uniform quality, it is probable that there is a slight trend toward buying of tested vendors, checking their service from time to time by placing orders out for competitive bids.

A striking development in recent years is the change in the attitude toward salesmen. Some purchasers make a real effort to save the salesman's time and convenience and in general to cultivate his constructive goodwill.

Purchasing agents are more and more keeping in touch with the general market through commodity indexes and business publications.

Forecasting services are many and varied. A list of 132 was compiled in this study. One of these reported that 60 per cent of its customers were clearly using the service only as an aid to investment. Two years ago the combined circulation of five of the best known forecasting services was 35,000.

In 500 forecasts of general prices just over one-half were found right, just over one-fourth were wrong and about one-fifth negative. The ratio of helpful to injurious predictions was 18: 10. In 433 forecasts concerning the volume of general business, nearly two-thirds were right, one-sixth wrong and one-sixth negative. The ratio here of the helpful to the injurious was 37: 10. Five hundred forecasts of individual prices were tested and these ranged in correctness almost exactly with the predictions of general prices. The forecasts tested were spread over the period from 1921 to 1927. They were distinctly more accurate up to 1923, during which year accuracy suffered, with the result that forecasters grew more and more cautious, and many qualified their predictions out of all definiteness.

There has been a great increase of managerial concentration upon close inventory control. A dramatic example is to be found in some automobile plants where the average inventory has actually decreased from several weeks' to a three or four days' supply.

Complete production planning as it is found today includes routing, scheduling and dispatching. The majority of plants studied have functionalized their production planning; costing is found in a very large majority of plants but in a wide variety of forms; and most concerns using standard costs are also keeping actual costs.

On the subject of industrial overexpansion the opinion of executives is about evenly divided, some holding that industry is overdeveloped, others holding the opposite.

There could be found no single impelling force which has driven management to make technical changes, though well up in the list stands the influence of high wages. The effect of technical changes upon the worker is a matter of considerable controversy. Some executives believe that we are facing a wholly new problem, that of technological employment and that there is now and will continue to be an unemployment of serious proportions unless something is done about it. The analysis of unemployment in the chapter on How Labor is Faring indicates no immediately pressing problem of this sort.

Any real knowledge of the extent to which skill has been displaced, to say nothing of the social consequences of displacement, must wait upon some consensus of opinion as to what is to be taken as constituting "skill." Quality demands have been giving executives more concern than have quantity demands. The progress of engineering toward objectified control of quality is certainly one of the significant items in our recent technical progress.

Since the publication of the report on Waste in Industry in 1921, more attention has been given to the problem of gaining continuous cooperation from employees to maintain standard quality of output and to avoid the waste of rejection. Some form of financial incentive to this end has been set up in a fair number of plants, which has been supplemented in some others by attempts to develop a group habit of thought. There is an increasing tendency to install special waste departments. The maintenance of machinery in standard condition has not been given the same attention, as in most companies the maintenance departments are expected to act only in response to the calls of producing department heads.

The World War forced a wider recognition of personnel management as a distinct function. With the business stagnation and glutted labor market of 1921, much of this was swept away, but the personnel managers left a habit in the business mind of considering personnel management as a difficult, distinct and major function of business management. Today, personnel management appears to be slowly increasing again, emphasizing the responsibility of line officers for sound relationship, but giving to staff personnel men the task of analyzing and criticising results, and devising and installing measures to improve them. Where functionalized employment departments exist, there is most often to be found a systematic follow-up of new employees, used both as a means of checking the correctness of selection and placement and of developing goodwill during the extremely difficult period of adjustment. The interest in training aroused in war time has not materially abated. As a means of general education, the company or plant magazine stood high ten years ago, but, as such, it has been pretty widely discontinued. A few companies have continued to develop the rating scales which came into use during the war. Several companies provide a small special committee of department heads to review periodically the rating charts of the entire personnel. In most companies discharge is still the prerogative of the foreman, though in some the approval of the personnel manager is necessary.

In spite of apparent reductions in labor turnover rates—indicated by the studies of the Metropolitan Life Insurance Company to be not far from one-half—interest in turnover does not seem to abate but rather to increase. This is probably because certain organizations of high standing and some trade associations are using current and valuable information. About two-thirds of the companies covered by our survey were tabulating turnover figures, and a little less than one-half of these were reporting their figures periodically to some outside organization.

Little evidence can be gathered as to the age at which workers are being retired.

In nearly one-half of the companies, job and rate classifications were found for which the various basic rates depended upon union scales or upon comparable rates in the vicinity. Incentive wages which took into account either quantity and quality of output, or both, have come rapidly into use, although they cannot yet be thought of as covering a majority of the workers. They are no longer merely piece rates. Group rates are now being used increasingly often. Besides direct payments there are to be found length of service bonuses, attendance bonuses and suggestion awards.

In 1921 the high-wage doctrine as a popular belief could not be said to have been born. In that year more than 300 articles appeared telling of methods used in cutting wages and speculating as to how far they would fall, but by 1922 articles of this sort had disappeared and those about wage incentives had taken their place. The high-wage doctrine by 1926 had gained its present standing. Not many popular beliefs gain such strength in a brief half-dozen years.

To judge from the companies covered by this survey, the beginnings of substantial progress have been made since the President's Conference on Unemployment in 1921 in moderating the severities of seasonal irregularities.

The hazards of accident are now generally met, in part at least, by state laws. The hazards of sickness are quite commonly met by employee mutual benefit associations, independent of or assisted by employers, and also to a growing extent by group insurance. The National Industrial Conference Board estimates that by the end of 1926, 4,700,000 employees were covered by group insurance totalling $5,500,000,000. The Conference Board reports that of the group insurance plans established in 1919, 6.7 per cent were contributory and in 1925, 68 per cent.

Pension plans are much rarer in spite of the fact that the pension idea is older than group insurance. Of the companies covered by our survey, 33 per cent have established a savings plan or cooperate with other organizations to promote thrift. Stock-purchase plans were found in one-fourth of the companies studied in the survey, appearing in one-third of those concerns having functionalized employment work and in one-fifth of the others. Company loan funds seem to be diminishing in significance.

Executives today are more ready than they were before the war to enter into organized schemes for regularly dealing with their employees, but it is undoubtedly true that in most establishments the relations between the management and employees are with individuals only and based solely upon supervisory contact. This was the situation in well over half of the companies studied. About one-fifth had active, formal employee representation plans, 10 per cent dealt occasionally with specially elected employee committees and 6 per cent were working under union agreements. It does not appear that the success or failure of an employee representation plan or of a cooperative relationship with a trade union is dependent upon the size or nature of the enterprise.

Marketing Management

Since 1920 it has been preeminently the problem of marketing, and especially the creation of a demand for the product and the development of new products, which has held the attention of business executives. In recent years interest has increased with great rapidity. There is appearing a tendency toward functionalization similar to the tendency which has been developed in manufacturing, and a belief that those responsible for carrying on the daily routine of getting orders should not be wholly depended upon to devise and improve the methods of getting them. The department to devise such methods is most often the sales-promotion department. For the development of new and improved goods to sell, there are engineering or design departments or committees who concentrate on merchandising. Selection, training and remuneration of salesmen have also been subjects of increasing interest. Something like 50 per cent more articles appeared on these subjects in 1927 than in 1925. It is hard to state the status of management in the routing of salesmen and in studying their performance through frequent reports, but a report by the Dartnell

Corporation on 4,000 firms says that in over 2,000 concerns there is a tendency toward using the regular salesman's report as a basis for well-defined plans for improving salesmen.

Sales costs are the center of increasing attention. No exact figures are available, but there is evidence that among manufacturers the ratio of selling expenses to sales went up decidedly between 1919 and 1924 and at a lesser rate from 1924 to 1928. The general trend of reduction in manufacturing costs has made selling costs relatively, even where not absolutely, of greater importance.

It has been commonly believed that the excess profits tax was the cause of the tremendous increase in post-war advertising, yet there seems to have been a still further increase since its repeal. The survey indicates that between 1919 and 1924 the amounts spent in advertising increased at nearly double the rate of other increases in sales expense, but that since 1924 this rate has materially diminished.

It is hard to discover in the field survey that the job of analyzing merchandise and its uses is adequately arranged for. The final results are, therefore, spotty. The invention of merchandise is in fact usually found to be more effectively carried out in contact with the place where it is to be used than shut up in a manufacturing laboratory.

Commodity simplification has now a definite standing. Pricing is now showing a trend away from exclusive selling influence. Market analysis is advancing. The growth in clerical service has been great but has not been accompanied by a similar growth in the status of clerical management.

In general, the art of management appears to have turned a corner in 1921, and to have grown more dependent upon skillful understandings of the whole situation and nice adjustments of means to the immediate environment. The result is that more men are being brought within managerial responsibilities, and the goal of organization is to release and utilize all the creative and managerial capacities of its members. There is today not only more production per man, more wages per man and more horsepower per man but more management per man.

IX

WHAT HAS HAPPENED TO AGRICULTURE

AMERICAN agriculture may be said to have provided one of the dark spots in our post-war economic picture, but there is always danger in talking of agriculture as a unit. Farming in the United States consists of many callings rather than one.

The unsatisfactory price equation for farm products is due on the side of demand to the strength of the competition which we are meeting in the export field, particularly in cereals and livestock products; the slow recovery of former customers; changes in dietary habits, fashions in cloths, and similar domestic changes. The situation has been further complicated by the rapid substitution of mechanical power for draft animals. On the side of supply it has been due to additional land; improved methods of disseminating knowledge which counteract the influence of declining fertility; and mechanization which has raised the productivity of man labor, while the number of workers leaving agriculture has only partially offset this increase.

The market mechanism which knits together supply and demand has shown high freight rates, an increase in many handling and selling charges, and high costs of containers and labor facilities used in packing and repacking, storing and processing products on their way to the consumer.

Demand

America's exports of the five principal cereals declined from 530,000,000 bushels in 1897 to 1898, to 168,000,000 in 1913. From a war-stimulated peak of 533,000,000 bushels in 1921 to 1922 they again dropped to 210,000,000 in 1925 to 1926 and seem to be maintaining themselves, but on a basis of price unsatisfactory to American producers. The export of pork products about equals the immediate prewar figure but is far from satisfactory as to price. Great Britain, which is our largest agricultural export market, is fostering imports from within the empire, and, as American agriculture turns from the old staples toward newer specialties in or near the luxury class, it is difficult to find export markets for them in the present state of world impoverishment.

Domestic consumption is affected by lighter eating and drinking, less voluminous clothing and an expanded use of natural and artificial silk and of paper products where formerly textiles of agricultural origin were employed.

Finally, in the past 13 years there has been a decline of horses and mules on farms from 25,700,000 head to 20,100,000 head and an even greater decline in the number of horses and mules in towns and cities. Apparently the demand for at least 15,000,000 to 18,000,000 acres of hay and grain land has dropped away. And no fully satisfactory substitution for the old midwest rotation plan of corn, oats and meadow has yet been worked out.

One mitigating circumstance has been the fact that our domestic industrial population has been generally employed at good wages.

Exuberant Production

Reclamation and the accessibility of land to motor trucks has brought into production vast new areas along with the increases in some areas in the intensity of cultivation. Probably a still more important factor is the advancing technique of agriculture. Local agricultural agents are now found in some 2,500 of the principal agricultural counties, and there has been an intensive development of boys' and girls' club work and farm bureaus.

Increased mechanization of the farm represents the second wave of mechanical advance in agriculture, the first having been the sweeping adoption of horse-drawn implements in the period between the Civil War and the World War.

Power Farming

The past ten years have shown a most striking development in the transition from horsepower to mechanical power in agriculture. Since 1919 the decline in the number of horses on farms has continued and shows signs of further acceleration. Accompanying this there has been a sharp increase in the number of tractors. In 1925 there was one tractor to each 7.8 farms of 50 acres or over; in 1920, one tractor to each 16.9 farms of 50 acres or over. The advance has doubtless been even more rapid since the census of 1925 was taken.

The tractor, of course, sets a new pace, and, instead of taking the place of the horse and mule and fitting itself unobtrusively into our agriculture, it creates a demand that agriculture be drastically readjusted.

Wheat growing heads the list in any discussion of mechanized farming. A striking effort is that of the now famous Campbell Farming Corporation of Montana using mechanical methods on 100,000 acres of dry farming land.

The "combine" or harvester-thresher, which has been extensively used in western wheat growing is now moving rapidly eastward. Its effect on farming organization and costs is almost revolutionary. In 1923, 1,099 combines were sold, in 1927, 11,221. To secure maximum economies, it is necessary to use the combine outfit nearly to its maximum capacity. For a medium-sized machine this means harvesting something like 1,000 acres, and it is generally calculated that no economies are effected unless at least 300 acres of grain are to be handled each year. Cooperative arrangements to use the combine or the development of larger operating units seem to be the alternatives if the full possibilities are to be realized. Where the combine is used in wheat harvesting, direct savings on production costs of as much as 20 cents a bushel have been made.

The tractor also has brought about important changes in farming methods, since it is indifferent to temperature, flies or the condition of the soil. In other types of farm machinery there also has been considerable progress, and the farm truck and even the so-called "pleasure car" should be included in any list of farm equipment.

The acceleration of the wheat-harvest period resulting from the use of the combine has created new problems of storage, car supply, glut prices, and moisture damage. In the northwestern and southwestern wheat belts, farms of 5,000, 10,000 and 50,000 acres are being operated. Evidently America can supply herself with an abundance of grain at costs commensurate with modern industrial standards and even send a considerable surplus abroad over cheap water routes, but this means ruinous competition with the wheat growers in many of the older sections of the central and eastern United States and rocks the foundations of land values in certain areas.

Several of the changes which have come about in wheat growing apply to corn. With the tractor the corn farmer can prepare his land for planting about twice as rapidly as was possible with the most efficient team methods. The silo and the practice of "hogging down" corn, as well as the introduction of the corn picker and new types of corn shellers, have been factors in these changes. Tractor-drawn corn harvesters, which gather and shred the corn stalks in the fields and dump the cut silage into wagons or trucks, are reducing the labor of making silage. The 160-acre farm has come to be looked upon as small rather than large. Close observers are looking with more and more favor on the 640-acre tract as a family farm in the corn belt, and for maximum efficiency the farmer should operate perhaps 1,000 or even 2,500 acres.

The transition bears heavily upon those farmers who are pressed to increase their investment in equipment when farm-produce prices are low as compared with operating costs and overhead.

As in the case of wheat, there is every assurance that we shall have an abundant and moderate-priced supply of corn for home consumption and export of its derived products, pork and lard.

In the cotton belt during the whole of the past 25 years, the boll weevil has brought about a rapid adjustment and readjustment in farming. The World War also has been an important factor. Plantation labor in the eastern cotton states has been pulled away to the North and has caused the abandonment of considerable areas. Between 1910 and 1925 whole counties in Georgia lost from 60 to 75 per cent of their negro farmers. At the same time the westward movement of the cotton industry brought cotton growing into a region of comparatively cheap and level land upon which machine methods could be introduced, with a lowering of production costs and satisfactory net returns. The hand picking of a bale of cotton used to require about 120 hours; a bale can be "sledded" in 7 hours by methods now in use in west Texas and Oklahoma. Mechanical cotton choppers and cotton pickers are being experimental with in the East. Their coming would tend to restore the competitive position of the eastern cotton section, in which the "sledding" method of the subhumid West can not be used because of climatic difficulties.

Apparently these changes have put us in a position to continue, for many years to come, our predominance among the world's sources of cotton.

The sweeping change in the production of cereals and cotton applies, though in lesser degree, to the other branches of American agriculture. The tractor, the truck and other forms of mechanical equipment are widely used. The milking machine, the cream separator and equipment for making silage have been important in dairy farming. New insulating materials and the development of small electric refrigerating units have benefited the orchardist and truck grower. In the case of tobacco, sugar beets and other products which have always required a large amount of hand labor, relatively little change has taken place.

Improvements Other than Machinery

Technical progress has greatly influenced the productivity of the individual farmer. From 1919 to 1924 there was a decrease of 13,000,000 acres in crop land in the United States—the first decrease ever shown by census statistics in the agricultural area of the nation. At the same time there was a decrease in the number of farm animals, a decrease in the number of farms and a decrease in farm population. According to the Secretary of Agriculture, the increase in labor efficiency, probably never before equalled, is attributable in part to the utilization of more productive livestock and crops, in part to the increased use of machinery and power on the farm.

Marketing

The United States Department of Agriculture, the state experiment stations, the extension service and other educational agencies have rendered splendid aid to our farmers in their struggle to readjust their industry to new and rapidly changing conditions. But there seems little reason to believe that a satisfactory adjustment of production to market demand can be speedily made. Shifts from one type of agriculture to another are difficult and precarious. On the production side it seems doubtful if the American farmer is making or can make adjustments fast enough to keep pace with changes in technique and market conditions.

The motor truck and automobile have caused many local markets to decline in importance and the first benefits of the change seem to go largely to the carrying agencies. On the other hand the concentration of business in larger towns has tended, in some cases at least, to give a brisker, more competitive primary market.

There has been a loss of local railroad service. The general level of freight rates upon farm products is high, and, while the Hoch-Smith resolution has called for a complete review of this situation, the question of the general rate structure is very intricate. It might be desirable to reexamine the "cost of service" theory of rate making. To take one example, low freight rates on cotton would inure to the advantage of the New England mills, high rates to the Southern mills. Which do the cotton-growing states want?

Cooperative marketing has brought about considerable improvement in standardization, processing, transportation, market distribution and merchandising. It has been signally unsuccessful in the perception of the relation of supplies to prices and in the devising of any means by which such supplies could be adjusted upon a satisfactory price basis. In the last few years efforts have turned toward a horizontal integration of shipping and selling interests which would embrace private dealers as well as cooperative associations. If these fail, they may be followed by a more determined effort to secure legislative authorization for marketing arrangements which will remedy the weakness of voluntary cooperation by requiring all those engaged in a given line of production to participate in a common scheme of market distribution.

Capital, Credits and Land Values

There has been much ill-considered discussion of the farmer's credit situation. In a broad way several pieces of rural credit legislation already enacted have tended to put the credit resources of the country at the disposal of the agricultural industry upon terms as advantageous as those available to other industries. To some extent there has been a revival of "dealer credit."

The time appears to be drawing near when we shall cease to view land as a speculative investment, when adequate outlays for equipment and working capital become of prime importance in determining the return to labor and management, and when current income commensurate with that obtainable in other callings is insisted upon. In the Middle West the implications and results of the decline in land values are still little understood. The whole structure of capitalization of the agricultural industry in considerable parts of our country have been shaken by the events of the last few years, and such recovery as has taken place has not yet given a clear indication of future trends. Profits are being found by going rapidly over large areas of comparatively low-yield land, and the scarcity value of land in the older sections has quite possibly lessened as a result.

The Comparative Immobility of Agriculture

Agriculture is comparatively immobile, and this will doubtless continue. Farming, to many of its followers, is a scheme of life and not a business in the ordinary commercial sense. Farmers produce for themselves and their families as well as for the market. Moreover, the actual direction of agricultural enterprise is determined by the decision of a number of operators, which embraces some 60 per cent of the total number of workers in the industry, whose capital resources are limited.

We must first make up our minds as to the objectives of agricultural reorganization. Shall we strive for the maximum of efficiency which can be secured under a system of decentralization and individual autonomy, or do we wish centralization as a possible means to greater efficiency?

Perhaps in the long run the hard and fast line between agriculture and other industries and between rural and urban residence will tend to disappear with the program of changes now under way. As the chapter on Industry shows, there has been a marked decline in manufacturing in the larger cities and a growth in manufacturing in what we have regarded as the agricultural states and in towns of less than 25,000 population. Farm and household appliances tend to reduce the labor of farm women in somewhat the same manner as they reduce the labor of men, and improved highways enable city dwellers to get easily to the country. We may in time see a considerable decrease in population in the open country without any real decrease in the quantity of the product and with a lowering of production costs and more effective utilization of labor.

It might prove wise for the farmer to take a stand as militant, with reference to the American standard of living, as has the trade unionist and possibly to invoke the machinery of government toward this end.

A final factor in the immobility of agriculture arises from the sentimental and financial attachment of the farmer to the soil.

The Movement from the Farm

During 1920 there was a net gain in total farm population of approximately 500,000 people. The beginning of an unusual movement from farms to cities took place in 1921. By 1922 there was apparently a net loss in the farm population of 460,000 persons; in 1923 the net decline was about the same; in 1924 the net loss was less, being 182,000; in 1925 the loss was 479,000. In 7 years the farm population of the United States has probably declined more than 3,000,000.

No statistical proof that the best farmers are leaving the farms has ever been produced. On the other hand the best cotton farmers of today are better than those of the early period, and the farmers who have remained in wheat growing are certainly those of a superior type.

The Outlook

Industrial chemistry affords some additional outlet for farm products, but the limiting factor is the collection and transportation of the raw materials which usually involve a cost disproportionate to the value in competition with other raw materials already available in large quantities. Undoubtedly the labor of the chemist will produce further results, but this can not be relied upon for a practical program of immediate agricultural relief. There is nothing which seems to promise this. Basic difficulties have not been removed and new complications are arising. Indeed, agriculture may have not far ahead of it what in stock-market parlance is called a "secondary reaction." After ten years we can hardly call the situation an emergency but must address ourselves to the question of what sort of permanent organization of agriculture the nation needs and should expect.

X

PRICE CHANGES

COMPARED with the period before the World War, three important differences in price conditions have marked the 7 years since the deflation of 1920 to 1921: Wholesale prices are approximately 50 per cent higher; the trend of wholesale prices has not been rising, as in prewar years, but has been declining slightly; and this declining trend has been associated with increasing physical productivity, rising wages and increasing profits.

Ranking eighteen countries according to the rise in their wholesale price levels between 1913 and 1927 shows Belgium the lowest with a range of 23 per cent and Russia the highest with a range of 71 per cent. The median of the eighteen indexes is almost exactly equal to the index for the United States.

Perhaps of greater importance than the degree of rise in prices during the last fifteen years is the direction in which wholesale prices are moving. In terms of gold, only four out of nineteen countries show rising levels of wholesale prices between 1922 and 1927; in fifteen countries wholesale prices have declined so that the general drift of world prices has been downward. This movement stands in sharp contrast to the trend of wholesale prices in the chief industrial countries between 1896 and 1913. During that period wholesale prices in the United States rose at an average annual rate of 2.3 per cent, in Great Britain 1.7 per cent, and in Germany 1.8 per cent.

The distinctive economic movements in the United States in recent years are shown in the following table which gives the average annual rate of change, 1922 to 1927, in percentages:

	Per cent
Primary production	+ 2.5
Production of manufactured goods	+ 4.0
Ton miles of freight carried	+ 4.0
Employment in factories	— 0.7
Factory payrolls	+ 1.7
Per capita earnings, factory employees	+ 2.4
Wholesale prices, all commodities	— 0.1
Wholesale prices, products of American farms in raw state	+ 1.2
Prices of commodities at the farm	+ 1.1
Wholesale prices, non-agricultural products	— 1.8
Profits, industrial corporations (computed from data for the period 1923 to 1927)	+ 9.0
Dividend payments, industrial and miscellaneous corporations	+ 6.8
Prices, industrial stocks	+ 14.1

The Price Level

The rising price level during the two decades prior to the war affected manufacturing methods. Business men formed buying and selling habits which were hard to change when the price level declined.

In the prewar period the prices of individual commodities were subject to relatively abrupt changes from month to month and from year to year. The specific price-making forces which affected individual commodities differed materially in their intensity, and the disruptive forces which tended to alter existing price relations were relatively strong. There was a relatively high degree of price instability, but during the quarter century these measures of instability showed a tendency to decline. This downward trend is all the more significant in that it accompanied a rising price level.

The prewar tendency toward greater stability in the prices of individual commodities has continued. If we may look forward to approximate stability in the price level in future, the expectation of greater stability in the prices of individual commodities is strengthened. Figures for 1924, 1926 and 1927 show a degree of price dispersion from year to year about equal to that which prevailed during the decade before the war. If the tendency toward price stability persists, it will affect materially the economic complexion of the years before us, for some of the speculative element goes out of business when such conditions prevail. Business and prices alike seem to be growing more stable.

Trends of Price Groups

The trend of price groups in the prewar and postwar periods is strikingly different. The sustained improvement in agricultural conditions is reflected in the margin of more than one per cent between the rates at which farm products and all commodities were rising in price. Five of the eight groups presented rose less rapidly in price than did the all-commodities index. Fuels, clothing, furnishings, metal products and chemicals and drugs were becoming relatively cheaper.

In prewar years farm products were becoming relatively dearer while non-cultivated products were becoming progressively cheaper. Raw materials were rising in price more rapidly than processed goods. Foods were becoming dearer and non-foods cheaper. Forest products were rising in price at a relatively rapid rate while the price of animal products and of cultivated vegetable products were gaining on the general average. The relative value of mineral products, in terms of all commodities, was declining at a rate of one per cent a year.

In those years the trend of prices of raw farm products is more significant as to the situation of the farmer than the movement of the group of commodities which are classed as products of American farms. Here we find raw materials rising at a much more rapid rate than processed materials. Again, a striking margin is found between the trends of raw minerals and of processed minerals. This progressive cheapening of major industrial materials played an important part in the economic development of the United States before the World War.

Finally, the cost of living was rising during the two decades before the war. Professor Paul H. Douglas holds that the earnings of labor in general between 1896 and 1913 were rising 2.4 per cent a year, while the earnings of factory labor rose 2 per cent a year. Real wages of all workers rose 0.5 per cent a year, while those of employees in manufacturing plants rose 0.1 per cent a year. Earnings barely kept ahead of living costs.

Post-war Trends

From 1922 to 1927 the net movement of wholesale prices has been slightly downward, but the differences between the movements of the major commodity groups have been even greater than during the prewar period. As in the earlier period, farm products and foods have gained relatively while metals, fuels and house furnishings have lost. Of the nine groups, six have declined (five substantially), two have risen appreciably, and one has remained practically unchanged. A more detailed analysis shows a striking range of variation, extending from the crude rubber group (which increased in price at an average rate of 16.8 per cent a year) to the silk and rayon group (which declined in price at an average rate of 5.8 per cent a year). The price trends of foreign and domestic products have been reversed within the last six years. Foreign products, a relatively small group, however, have risen at a rate of 3.4 per cent a year in the face of a practically stable price level.

Under farm products the chief gain in prices at wholesale has been recorded by raw materials. Prices at the farm, averaged for all farm products, have gained at a rate of 1.1 per cent a year. Substantial gains have been made by meat animals, grains, fruits and vegetables; dairy and poultry products have just held their own.

Movements of wages, rents and prices from 1922 to 1927 have been upward at the same time that the wholesale price index has been slightly downward. Security prices showed a phenomenal gain from 1922 to 1929. Wages, as measured by the present index, come next. The only material declines are found in transportation costs and in the prices of industrial commodities at wholesale.

The average annual rates of increase in earnings for the years from 1922 to 1927 fall very close to the rates at which money earnings were increasing during the two decades preceding the war. The great difference between prewar and post-war valuations is due to the difference between the trends of living costs. The rise in living costs between 1896 and 1913 accounted for substantially all of the increases in the earnings of factory labor and left only a small margin of gain for all groups of employees. But in post-war years living costs have increased less than 1 per cent a year, while money wages (except for women employees in manufacturing plants) have gone up at rates varying from 2 to 3 per cent, showing a gain in the purchasing power of wages of 2.1 per cent a year. For factory employees the purchasing power of per capita wages has gone up 1.7 per cent a year.

To summarize our discussion:

1. From 1922 to 1927 the general level of wholesale prices showed a slight declining tendency, but there were pronounced differences among commodity groups in the direction and degree of price change.

2. Prices of building materials, textiles, house furnishings, metal products and fuels declined substantially.

3. Raw materials rose, but processed materials declined. The small group of products of exclusively foreign origin rose materially in price, while products of exclusively domestic origin declined.

4. Cultivated products advanced in price, non-cultivated or industrial products declined.

5. Prices of farm products at the farm advanced at a rate slightly exceeding 1 per cent a year.

6. Security prices rose at an average rate of 9 per cent a year. Important declines were registered in transportation costs, and cost of living items, other than food, fell somewhat.

7. The rate of gain in money wages in post-war years has been very close to that which prevailed during the two decades before the war. The purchasing power of wages, on the other hand, appears to have increased in recent years at a rate slightly below 2 per cent a year.

Post-war Business

Turning to economic movements other than prices, we find a number of important tendencies. For instance, the rate of increase in production of various commodity groups is greater for the groups as a whole than are the differences found in the study of price groups. It is also evident that goods have been moving from purchaser to consumer in a steadily growing volume. The measures relating to retail distribution, however, do not necessarily indicate an increasing volume of total retail sales; in considerable part they reflect shifts in the channels of retail distribution.

Imports have been growing somewhat more rapidly than exports and our exports of manufactured articles, other than food stuffs, have been rapidly expanding.

In spite of the emphasis upon hand-to-mouth buying, stocks of raw materials and manufactured goods have steadily increased in recent years. The only three groups to show declines are raw metals, leather and paper. In sharp contrast to the increase in stocks is the pronounced decline in unfilled orders.

In the great expansion of building is found, of course, one of the striking economic characteristics of the post-war era.

In nine of twelve major industrial groups there has been a decline in the volume of employment; in four of the twelve there has been a decline in payrolls; in only one of the twelve has there been a decline in the per capita earnings of employees.

Figures of corporation profits from 1923 to 1927 reveal an extraordinary increase in the profits of certain industrial groups. Profits of public utilities have grown at a rate of 14.7 per cent a year. For nine of the nineteen industrial and miscellaneous corporations the rate of increase has exceeded 10 per cent a year. Six corporate groups have shown declining profits, the most severe losses being in the clothing and textile and coal industries. Dividend and interest payments show that disbursements to bond and stockholders have grown rapidly. The number of business failures has increased about 1 per cent a year, yet the liabilities of business failures have declined in excess of 5 per cent a year.

A comparison of the economic tendencies of the period from 1902 to 1907 with those of 1922 to 1927 is instructive. Each was a time of rapid industrial growth, yet the expansion from 1902 to 1907 ended in a major industrial collapse, while the growth from 1922 to 1927 appears to have been a sounder and more normal development. In the earlier period the purchasing power of two great groups of consumers—the workers in manufacturing industries and the agricultural producers—was being steadily impaired; in the corresponding post-war period, the purchasing power of these two groups was steadily advancing.

If we compare post-war and prewar price relations among commodities and groups of commodities, we find between 1919 and 1923 a swing away from the prevailing relationships of prewar days. Between 1923 and 1927, on the other hand, we find indications of an uninterrupted return toward the relationships prevailing before the war.

The system of price relations which embodies the results of changes during the five years from 1909 to 1914 has been substantially modified. The price structure which was built up during the quarter century preceding the war suffered less drastic changes, although it was materially altered by the price revolution which accompanied the war.

Whether the recent tendency of prices to return toward the relations which had been built up in pre-war days will continue is a question which only the future can answer.

XI

CREDIT AND MONEY MOVEMENTS

WE shall examine the monetary conditions of the period under review in order, first, to measure the availability of credit and capital for business use and, second, to describe particular influences which have operated upon money conditions, such as treasury financing, changes in banking organization and the influence of the Federal Reserve System.

Interest Rates

Interest rates for short-time money showed, in general, a declining tendency through 1927 followed by a sharp upturn in 1928. Rates for long-time money showed an almost continuous downward trend. Commercial paper rates were somewhat lower than in the preceding 24 years, but rates for time and call loans on stock exchange collateral (used primarily in speculation) and yields on both bonds and common stocks were higher than the average for preceding years. It seems probable that rates charged to bank customers have been somewhat lower than the earlier average.

The lower level of rates for business money compared with high rates for what might be called "speculative money" may be tentatively explained by the kinds of commercial paper made eligible for rediscount at Federal Reserve banks, and by the fact that business concerns have financed themselves more by issuing securities.

In contrast with a less active demand for commercial loans, the demand for time and call money was very great. This demand came from active security markets, rising security prices and a vast number of new enterprises.

The yields on bonds and common stocks moved sharply downward so that the average was not representative of the period. Call money, time money and commercial paper rates showed something of a downward movement, although this movement was reversed early in 1928 when rates began their rise to the highest figure of the period. The relative increase in the rates for call and time money during 1928 was much larger than that in commercial paper. Bond yields and stock yields, representing long-time rates, showed a much sharper downward tendency. In the case of bonds the yields for the end of 1927 were slightly below the average of the years from 1890 to 1913, and in the case of stocks the yields in 1928 were below the lowest yields for any of the years from 1900 to 1913. It was thus possible to sell new issues of stocks and bonds at low rates. Indeed, industry has often been in a position to borrow in the capital markets at rates below those charged by banks.

Rates in the last few years have been considerably more stable than in the years from 1890 to 1913. The fluctuation of bond yields and stock yields has been considerably reduced; the fluctuation of commercial paper and time money rates has fallen to less than half; and fluctuations in call money rates have been only one-fourth as wide as in the earlier years. This greater stability is in part due to improvements in the credit mechanism and particularly to the presence of the Federal Reserve system, but it also reflects the absence of commodity speculation.

Bank Funds

The last few years have been a "borrower's market." This condition, as well as declining interest rates, possibly may have been due to a reduced demand for bank funds rather than to an unusually ample supply of bank credit. Business has been financed less by borrowing from banks and more by borrowing in the capital market through security issues. Industrial requirements for bank loans also have been lessened by the prevailing custom of reducing inventories. The recent period has been characterized by a rapid growth in bank credits, though not more rapid than in a number of other periods in the past 50 years.

One feature has been the difference in the geographical growth in bank credit, the more rapid increases being in the Eastern, New England and Pacific districts, whereas in the mid-western and southern districts there has been only a moderate growth and in the northwestern district a decline. The retarded growth in the three prominent agricultural districts followed an extended period of very rapid growth from 1900 to 1920, which was much more rapid than that which characterized the eastern and New England districts. We may well ask if the rural financial disturbances of 1921 and following years may not have been partly the result of overexpansion from 1900 to 1920, a period when too many banks were organized and when there was a considerable overexpansion of bank credit.

Figures of total loans and investments and total deposits of the Federal Reserve banks show that the increase of bank credit since 1922 has been far from steady and continuous. It was particularly rapid in 1922, 1924, 1927 and 1928 with little or no gain in 1923 and 1926. In general the most rapid increases of credits were at times when business was most in need of the stimulus of easily available credit, and, contrariwise, the periods of slowest growth were when business was in large volume and perhaps in some danger from overstimulation.

The effect of gold movements on the volume of bank credit has been modified by changes in the amount of currency in use, by changes in practice as to bank reserves and by changes in the position of the Federal Reserve system. Between the beginning of 1922 and the middle of 1927, net gold imports amounted to $885,000,000. Taking account of domestic production and changes in the amount of earmarked gold, there was an increase of about $902,000,000 in total gold stocks. The increase in this 5½-year period was greater than in the 14 years from 1900 to 1914, and it followed substantial net gains from 1915 to 1921 which had already greatly enlarged the gold basis of our bank credit. The banks used part of their acquisition of foreign gold to obtain from the Federal Reserve banks an increase of $285,000,000 in money and circulation; they used part of it to repay borrowings at the Federal Reserve banks, as shown by a decrease of $278,000,000 in Federal Reserve credit in use, and the major part, that is, $582,000,000, went to increase the deposits of member banks at the Reserve banks. The basis for the increased deposits in the member banks was thus laid by the increased reserves resulting largely from gold imports, since each dollar of these reserves supports on the average well over $10 of commercial bank deposits (both time and demand).

Under the Federal Reserve Act the requirements of bank reserves against time as against demand deposits was reduced to 5 per cent in 1914 and to 3 per cent by amendment in 1917. Consequently, imported gold has gone further in supporting credit expansion than would otherwise have been possible.

The principal influence from 1922 to 1927 toward rapid growth of bank credit and easy credit conditions was gold imports, an abnormal influence which cannot be expected to continue. In the 12 months ended July 31, 1928, this country exported more than half as much gold as was imported in the preceding 5½ years. Although partly offset by the retirement of $105,000,000 of currency, which built up bank reserves, the gold exports made it necessary to call into use about $462,000,000 of additional Federal Reserve credit.

This reversal in the gold movement has materially changed the outlook for the supply of bank funds. It has greatly reduced the country's supply of "free gold." In addition to the gold in the Federal Reserve banks, there has been about $1,000,000,000 in the form of gold certificates. Of the $900,000,000 of free gold, nearly one-half has been lost, leaving in September, 1928, about $500,000,000 of free gold.

Other countries still hold in this country large liquid balances which are subject to withdrawal. Other countries being eager takers of gold, it is uncertain how much, if any, of each year's new output of gold will flow here. The normal growth of bank credit in the country to care for the increasing needs of trade calls for $50,000,000 to $100,000,000 of additional bank reserves each year. If the $650,000,000 of national bank notes in circulation were retired and replaced by Federal Reserve notes secured by gold, this operation would lock up over $600,000,000 of gold. If the unsecured issue of legal tender notes were retired and replaced by Federal Reserve notes secured by gold, an additional $150,000,000 would be required.

Probably the country must adjust itself to a smaller annual increase in bank reserves than has recently been available. Continued economy of currency circulation may help to solve the problem. A revision of the law may be desirable to liberalize the provisions of the Reserve Act concerning collateral for Federal Reserve notes. If these notes were secured by the general assets of the reserve banks, rather than specific types of assets, considerable amounts of gold would be released. A less rapid increase in bank credit than in the past five years may eventually prove more wholesome.

Funds from Savings

Assets of life insurance companies and building and loan associations, as well as the time and savings deposits of banks, show a steady but diminishing rate of increase from 1900 through 1915 with a decline toward 1922. Since 1922 they show a much sharper rate of increase than in any of the preceding periods. From 1900 through 1913 annual savings in terms of dollars with a constant purchasing power averaged considerably less than $1,000,000,000 a year, from 1922 to 1927 they averaged nearly $2,000,000,000 and for the three years which ended with 1927 they held steady at a level somewhat above $2,000,000,000.

The volume of bank credit or of aggregate deposits is not directly related to savings, but the use which depositors make of bank balances is profoundly influenced by the volume of savings relative to demand for capital, by the course of interest rates and by the choice which is made of investment methods or arrangements. Certainly the purchasing medium increases and decreases in close relation to changes in the volume of bank deposits. Prices would have taken a very different course between 1922 and 1928 if the larger volume of deposits had been used in the same fashion and to the same extent as those of 1920. There would have been an inflation of bank credits with the obvious effects.

The lessened activity of bank balances induced by abundant saving is further accentuated, if, as has happened during the period under survey, interest rates decline. Funds in excess of adequate checking balances which depositors elected either temporarily or permanently to entrust to banks appear mainly in the item of savings or time deposits in bank statements, and it is the growth of this class of deposits that accounts for a very large part of the increase in the aggregate of deposits during the period of the survey.

Widespread saving has tended to increase aggregate loans and investments as well as total deposits of the banks, and at the same time, to reduce somewhat the amount of demand deposits. Thanks, at least in part, to saving, there has been no advance in commodity prices. Despite active business and large additional supplies of bank credit, the community has not experienced intense competition for labor and materials. Large and widespread saving has been a primary influence in counteracting the upward price tendency of an abundant supply of bank credit, but vivid memories of 1920 have certainly tended to restrain inventories; efficient transportation has removed fears of delays in shipment; style has become a factor of increasing importance in many lines; and there has been growing recognition of the economy and elimination of risks which may be secured in merchandising through a rapid rate of turnover. Among other restraining influences have been the price policies of industries, such as the automotive, the unbalanced economic situation, particularly that of agriculture, and, finally, the situation in other countries. These various influences, in conjunction with large savings, explain the failure of prices to respond with a decided upward swing to the impact of an abundant supply of bank credit available at declining rates. Evidently there is no automomatic or close mechanical relationship between the volume of bank credit and the course of commodity prices.

Government Debt Reduction and Foreign Investments

Government debt reduction also has contributed to the supply of capital, and foreign investments have served to maintain interest rates and to draw off part of the funds seeking employment. The employment of a larger part of these funds at home might have entailed greater industrial readjustments and so have affected business unfavorably, but the same might be said if some important domestic demand for funds, such as the construction of urban dwellings, had not materialized.

Employment of Investment Funds

The abundant supply of funds seeking investment at declining rates and the slowly receding tendency of commodity prices seem to have strengthened the financial structure of business.

A preference for long-term financing of business is reflected in the relatively small increase in the commercial loans of banks in recent years, as contrasted with the increased security holdings and collateral loans of bonds. A business necessarily becomes stronger as the proportion of its assets financed by stockholders increases relative to its indebtedness, so that collateral loans in contributing to this result are performing a most useful service to the community. This recent tendency may reflect a permanent change in the employment of bank credit. The collateral loan also performs another important function in developing and continuing a market for outstanding securities. From the banker's point of view, collateral loans, when made against a variety of securities, require less work than is involved in making unsecured loans to borrowers engaged in different lines of business.

The control over the conduct of industry which bankers may exercise is conditioned far more by the abundance or scarcity of capital relative to demand than by the actual amount of funds which are made available. When investment funds are ample, a strong business enterprise occupies a position of independence.

The Stock Exchange

The volume of trading on the New York stock exchange from 1919 to 1928 rose from 312,000,000 to

920,000,000 shares. The face value of bonds dealt in for the same years was $3,771,000,000 and $2,939,000,000 respectively. During the first 6 years beginning with 1919, the volume of security dealings was comparatively steady. It was not until 1925 that the annual volume of dealings in shares—452,000,000—exceeded that for 1919. The year 1926 showed practically the same high record as 1925, 1927 was much greater, and 1928 more than doubled it.

The causes for these advances were primarily the abundance of funds seeking investment and the decline in interest rates. Other factors were a more general recognition of the possibilities of appreciation of common stocks in a growing country, the organization of investment trusts, the increase in the number of branch offices of stock-exchange houses, the listing of shares of many additional enterprises and the conspicuously large profits of many companies.

A rising stock market—and the present study unfortunately covers only the rise—has a psychological influence which is favorable to business activity; it facilitates the marketing of securities among investors, and it lessens the cost of additional capital secured through the issue of new stock. Finally, it tends to favor the farsighted and venturesome at the expense of the cautious.

In view of the moderate rates on all classes of loans between 1922 and the end of 1927, the growth of brokers' loans in those years would seem to have served to provide a reasonably safe and liquid avenue for the employment of surplus funds. But in 1928 the stock market demand for funds became so great as to tend to bring about an advance in rates on all other classes of loans. The further advance in security prices in 1928, with an accompanying increase in broker's loans and in spite of a sharp advance in rates, is doubtless to be regarded as symptomatic of unrestrained speculation. But the functioning of the money market has also raised new and perplexing questions. The bulk of brokers' loans in the past has been furnished by banks and bankers. Recently, the funds of investors and surplus funds of business enterprises have provided nearly one-half of the total supply.

Recent developments cannot fail to affect unfavorably the development and functioning of the New York money market as a great and reasonably stable national and world financial center.

Investment Trusts

Copied from the British, our American investment trusts have rapidly grown in recent years, in part because of new recognition of the value of common stocks as investments. Diversification of investments has become increasingly important, and there are advantages for the small investor, in particular, in the services of an organization which gathers funds from many sources, invests them over a widely distributed list of securities, and commands information which is not available to the individual.

The investment trust somewhat resembles the savings bank, but it is not limited in its choice of securities by the legal restrictions which surround savings banks, it is not under such close governmental supervision, and, usually, it makes no promise of a fixed rate of return. It faces the temptations of concentrated control in the hands of a few men, without, at the present time, any very close supervision. The paid-in capital funds of investment trusts probably exceed one billion dollars.

The movement is too new to justify comprehensive conclusions as to its influence upon the security market or the stock exchange money market, and the total assets of the trusts have not been large enough to make us believe that they have exercised very much influence upon American finance.

Banks

During the first two decades of the twentieth century, there was a continuous and accelerating increase in the number of banks in the United States. A conspicuous reversal of this tendency has now continued for more than seven years, with a reduction of nearly 4,000 in the number of commercial banks. In general our system is characterized by a multiplicity of local banks exhibiting extreme diversity in size, character and experience of management and in the surrounding economic conditions of the communities to be served. Banks in the larger centers have been gaining and seem likely to continue to gain at the expense of the small rural bank. Mergers and voluntary liquidations rather than bank failures are bringing this about. National banks are now permitted to open branches in cities in which state banks have enjoyed that privilege.

With the operation of branches narrowly restricted by legislation, the tendency toward concentration shows itself in the formation of chains of banks, commonly including both state and national banks. Chains lack the internal controls of a unified accounting system, and they escape the simultaneous examinations to which banks with branches are subject. The form of organization of chain banks readily lends itself to abuse.

From 1921 to 1927 the Federal Reserve Board reports 4,513 banks suspended payment, of which 559 were subsequently reopened. The total deposits of the banks which failed were $1,151,000,000, an average of about $291,000 for each bank. This epidemic of failures has been confined almost entirely to small banks with limited resources, so that the failures have not been a large factor in the general financial situation of the country, however much suffering they may have caused in their communities.

In the four southern Federal Reserve districts, there were 1,321 failures during this 7-year period, while the Chicago district had 550 failures and the Kansas City district had 685. The Minneapolis district had the astounding number of 1,097 failures. In the three Federal Reserve districts of Boston, New York and Philadelphia, there were but 43 failures. These northeastern districts have an area of 150,000 square miles with a population of 33,000,000 and were served in 1927 by less than 3,300 banks. The Chicago district, with a somewhat larger area and with a population of only 17,000,000, was provided with a number of banks larger by nearly 2,000, and the Minneapolis district with an area of 414,000 square miles and a population of only 3,500,000 still had 2,633 banks in operation after 1,087 failures.

A more immediate enforcement of existing legislation would do much, but remedies for bank failures to be effective must be designed to reduce the number of financially weak banks, secure more competent officers and directors, and, above all, see that unsound policies are checked long before solvency is threatened.

The Federal Reserve System

The Federal Reserve system during the period under review has had to deal with two unusual problems; first, that created by huge gold movements and, second, the problem of international monetary stability. In addition there were the continuing problems of stability in the money market and the attitude of the reserve system to those business fluctuations called the "business cycle."

The huge gold import in the closing months of 1920 and during 1921 totaled over $800,000,000 and was absorbed without inflation by reason of the fact that it was used by member banks to liquidate their indebtedness at the Federal Reserve banks. The gold import from 1922 to 1927 was used as a basis for an expansion in credit and in currency. The latter was accompanied by an increase in the price level, although there was no inflation of commodity prices. The principal influence of the Federal Reserve system upon this credit expansion related to the timing of the expansion. It was more rapid, for example, in the years 1922, 1924 and 1927 than in 1923 and 1926. During the first few months of 1922 and during considerable parts of 1924 and 1927, the Federal Reserve banks were purchasing government securities. During the latter part of 1922 and the early months of 1923, the latter part of 1924, early in 1925 and to some extent in 1926, the Federal Reserve banks were selling government securities. The reserve system did not sterilize the imported gold, but it had much effect in timing the increase in the volume of credit. The gold was used for credit expansion at the time when the member banks deposited it in the reserve banks. The reserve banks did not utilize the additional lending power which they derived through their receipts of gold. Under the monetary mechanism of the country prior to the establishment of the reserve system, the export of $500,000,000 gold in a single year, such as we have recently seen, would have brought widespread disaster.

The mechanism of the Federal Reserve system thus made possible a huge export of gold without serious consequence to business or monetary conditions but at the price of firmer money conditions. In view of the huge growth in credit for speculative purposes, the reserve system evidently would not prevent the gold from exercising some of its normal influence in tightening credit conditions.

Investment bankers and investors have played an important part in European recovery by lending them over one billion dollars a year for several years past. The Federal Reserve banks extended credit to the Bank of England, the National Bank of Belgium, the Bank of Italy and the Bank of Poland when these countries were prepared to announce their legal stabilization programs. The credit took the form of an agreement on the part of the reserve banks, if desired, to purchase bankers' acceptances from those banks of issue at stipulated rates and in specified amounts, if the need should arise. In the case of the Bank of England, the credit took the form of an agreement, if desired, to sell gold to that bank. In none of these four cases was the credit utilized, but public announcement of the agreements provided an important psychological influence.

Although at all times domestic conditions have necessarily received first consideration in the determination of Federal Reserve discount rates and open market operations, there were two important occasions in 1924 and 1927 when some modification of policy with the world situation in view was not incompatible with domestic conditions. Easy money in 1924, stimulated by the Federal Reserve system, aided the rapid business recovery in this country and helped sterling exchange, so that when Great Britain passed her stabilization legislation in the spring of 1925, the transition to gold payments was made without serious economic disturbance.

In 1927 when the rates of a number of Federal Reserve banks were reduced and purchases made of government securities, the gold movement reversed itself and the exchange on London and a number of other centers moved upward. A threatened money stringency abroad, which would have hampered world trade, was averted.

The problem before the Federal Reserve system is not one of preserving rates at a uniform level but of exerting such an influence that money rates may be adapted to the economic swings of business. High money rates at times of overstimulation and low money rates at times of understimulation should, in the long run, assist in flattening out business fluctuations.

The evidence seems reasonably conclusive that the Federal Reserve system has made a substantial improvement in the stability of the money market. The experiment has not been sufficiently long to justify passing final judgment as to the influence of the Federal Reserve system upon the business cycle.

XII

OUR CONTACTS ABROAD

Exports and Imports

THE value of American exports increased regularly and very greatly each year from 1922 to 1925, declined slightly in 1926, and in 1927 underwent a mild increase, still remaining a little below the maximum reached in 1925. In physical volume our export trade increased generally during the period but showed considerable declines both in 1925 and in 1927. By eliminating price changes of a number of important exports and computing the annual values of each export at its average price for the period, our total exports are shown to have increased regularly during these years.

The geographical distribution of our outgoing trade has varied. Of our total exports, substantially half goes to Europe. In recent years exports to Canada, Latin America and to the rest of the world have gained more largely than those to Europe. Within Europe the preponderant increases have gone to Germany and Russia.

Among our exports King Cotton continues to hold first place. Machinery and automobiles have shown extraordinary and uninterrupted increases, the former having almost doubled and the latter more than quadrupled in value. Canada notably has increased her imports of American machinery. Our exports of gasoline and fruit increased while those of meats declined and in 1928 were back at their prewar level.

Total values of our merchandise imports have had their ups and downs, although in 1927 they were about two-thirds higher than the abnormally low figure for 1921. Declines appeared both in 1924 and 1927 and there was a small decline in 1928. Eliminating price changes of important articles, however, our imports in 1927 remained almost exactly equal to those of 1926.

Europe continues to supply the largest single portion of our imports. It was fully one-half in prewar years; it now makes up somewhat more than one-quarter of the total. Latin America is second with slightly less in value than that furnished by Europe, while Canada is responsible for less than half as much as that originating either in Latin America or in Europe. With imports as with exports, much of the recent increase has come from the development of formerly little-known markets.

In 1926 silk, sugar, rubber and coffee made up in value one-third of the total of our imports. Most of the remainder of those which bulk high in value are raw materials admitted with little or no tariff restriction.

In general the value of our merchandise exports is 10 per cent of our domestic production of exportable commodities. The values of exports and of imports have shown a general tendency to increase during the past 6 years, but the portion which they make of our total production has gradually declined.

An outstanding change in our foreign commerce has been the exportation of American industries themselves. Because of the difficulty of exporting to countries with high-tariff walls, many American firms have constructed branch manufacturing or assembling plants abroad behind foreign tariff walls.

Foreign Loans

The foreign security takings of American investors have increased since 1922, but not in proportion to their total takings. Especially toward the latter part of the period, foreign purchases of American securities and the placing of foreign funds in the New York money market have greatly reduced our gross exports of capital. There is a striking similarity in the amounts and in the changes of our "favorable" balance of commodity trade with the amounts and changes in our net export of capital.

Predictions that America would have an "unfavorable" trade balance as soon as the yield of its foreign investments exceeded its net export of capital have failed. In every one of the six years the yield of investments exceeded the net export of capital.

No significant correspondences appear between foreign credits or investments and the total exports of the United States. In the balance of international payments of the United States, the dominating positions are held by credits of various sorts, by interest payments, and by tourists' expenditures.

The readily adjustable items other than gold in our balance of payments seem to be largely included in the investment and credit items rather than in balances of commodity trade.

The flow of new American capital has temporarily lifted the most formidable barrier to the outflow of goods, namely high tariffs. The low fixed rates and supply of funds in our great money market have resulted in large flotations of foreign securities and in all other kinds of foreign investments and lendings. The actual migration of American industries to foreign countries while presumably reducing future manufacturing operations and employment in this country has been important in stimulating American exports of machinery. The effort to avoid wide fluctuations in the general level of prices in the United States also has been a factor. Since it is only through price changes that gold movements directly affect merchandise trade balances, the "normal checks" to American exports have simply failed to operate.

Large exports have been made possible by the great volume of foreign credits granted by this country. Easy money rates in New York have enhanced its position as an international monetary and investment center and have caused foreign balances to increase and gold imports to grow. There resulted a stimulus to speculation and to business, arising from easy and plentiful short-time money, a further import of foreign funds and a resulting stimulation to business and to investment in domestic as well as in foreign securities. The heavy and rapidly increasing payments required of foreigners combined with our high-tariff policy are forcing an ever wider spread between prices at home and abroad. In these ways encouragement has been given to the expenditures of American tourists and of the migration of American industry to foreign countries.

There seems to be a close correlation between the movements of the foreign credits granted by this country and those of our balances of commodity trade.

The gold movements described in Chapter XI on Credit and Money Movements have, of course, exerted a marked influence on American business.

XIII

HOW THE NATIONAL INCOME IS DISTRIBUTED

IN 1928 the total realized income in the United States probably reached $89,000,000,000, or about $745 per capita. This does not include paper profits, profits from the sale of capital assets, or the value of housewives' services.

Employees received about 57 per cent of realized income and 63 per cent of money income in 1925 and their share in the national dividend had increased from the prewar figure. About two-thirds of the employees' share went to wage-earners. But the chief gain as against prewar proportions has come to the salaried employees, which includes all of government and banking. Rents were a smaller proportion of the national income in 1925 than in 1913. There has been a decline in the proportion of total realized income going to stockholders. All labor income represented nearly 69 per cent of total realized income and property income about 31 per cent.

The gain in the employees' share of total realized income came largely in 1919 and 1920 and the chief change after that was a rise in 1923 followed by a dip in 1925. Preliminary estimates for 1926 and 1927 do not substantiate the contention that the share of employees in the national income has been declining.

The fluctuations in the share going to employees show little correspondence with the ups and downs of business. A striking commentary on the nature of modern corporate financial policy is to be found in the fact that dividends appear to be a more stable form of income than wages.

Real annual wages per employee were about the same in 1918 and 1920 as in 1913. They declined appreciably in 1919 and more sharply in 1921 and have risen considerably since, though there was a setback in 1924. Real annual salaries per employee on the other hand were considerably lower in 1918 than in 1913, declining still further in 1919 and rising every year since without excepting even 1921. Since 1923 they apparently have been above the prewar level. The decline in real wages in 1919 and to some extent also the decline in real salaries was due to changes in the cost of living.

It would be an interesting commentary on the development of the wage system to note whether the proportion of total money income derived from pensions, benefits and compensations for accidents is changing, but estimates for these items are not complete and there is no appreciable trend.

While rent accounts for a gradually decreasing proportion of the income in the period studied, the proportion going to interest, after a slight drop in 1917 and 1918, rises with the increase in government financing and remains above the prewar figures. Dividends represented a slightly larger proportion of income in 1921 than in adjoining years and a slightly smaller proportion in 1924.

Examining the prosperity of various industry groups according to the total income disbursed by them in 1913, 1925 and 1926, the most important shifts are the declining importance of agriculture, whose proportion has decreased 3 per cent in the 13-year period under review, and the increasing importance of government and of merchandising. The fact that the proportion of income disbursed by the construction industry shows no appreciable change between 1913 and 1925 appears to substantiate the contention that the amount of construction in recent years has not been abnormally large.

There has been an increase in the importance of corporate enterprises as an income disbursing agency, but the increase is certainly not striking and the decline in proportionate importance after 1919 is greater than the net increase for the entire period between 1913 and 1925. Corporate enterprises and government accounted for about 47.5 per cent of the total income disbursed in money in 1913 and almost 55 per cent in 1919. By 1925 the percentage had declined again to about 50 per cent.

Manufacturing accounts for about 30 per cent of all employees' labor income and the unclassified occupations for nearly 25 per cent. These groups with merchandising, public utilities and government together pay out nearly eight-ninths of all compensation paid to employees. On the average, banks appear to have the highest paid employees, with government and the construction industry next, and agriculture at the bottom of the list.

The corporate income-tax returns give a rough idea of the relative profitableness of the several industry groups. Mining is distinctly the least profitable according to this showing and construction the most profitable, but how far this is due to differing accounting methods it is impossible to say.

Individual income-tax returns reporting profits in 1925 show that a large proportion of the enterprisers in the transportation and public utility group are apparently reporting, less than half are reporting in manufacturing, and only a negligible proportion of farmers' incomes fall above the reporting limit. The highest reported profits per return were in mining, with banking and the unclassified group next and agriculture at the foot of the list.

Agriculture

A consolidated income statement for agriculture for the year which ended June 30, 1927, shows a deficit of $1,717,000,000. With no allowance for declining real estate values, the deficit would be converted into surplus.

The decline in the proportion of our total national income disbursed by agriculture is partly the result of a decreased relative remuneration per unit of output. The money income disbursed by agriculture appears to vary far more closely with general business conditions than it does with agricultural production. Agricultural wage-earners have probably received a steadier income than those attached to other industries, but their wages have risen less as compared to the prewar figure. While not as well off in 1925 as in 1918 and 1919, the average member of the farm community has evidently improved his condition as compared to 1913. Comparing 1925 averages with those of 1913, the per capita current income of the farm population has increased 96 per cent, while that of the entire population has increased 94 per cent.

Mining

A consolidated income statement for mining showing profits of $227,000,000 in 1925 indicates that while the condition of the mining industry has not been so deplorable as that of agriculture, it was not a very profitable undertaking in that year and it was distinctly less so in the four preceding years. This unprofitableness does not appear to have discouraged production, which has shown a sure but unsteady growth.

Mining wage employees in recent years in spite of considerable unemployment have been better off in comparison to prewar conditions than have those in all non-agricultural industries. In mining, as in agriculture, the decline in proportion of the total national income disbursed by the industry as compared to 1913 is partly a matter of money remuneration per unit of output.

Manufacturing

The manufacturing income statement for 1925 shows that about half the revenues which it collects from other groups it pays out to these groups again as expenses. Net profits were $3,372,000,000, total dividends and profits disbursed to individuals, $2,104,000,000, and total added to surplus, $1,268,000,000. Of the total realized income disbursed, labor received nearly 85 per cent. Salaries were 22.6 per cent of the total payroll, indicating a large attention to managerial activities.

The figures confirm the view that there has been a great improvement in efficiency, suggesting that while manufacturing accounted for about the same proportion of our national income in 1925 as in 1913, its importance in terms of physical output has increased relative to other industries while its relative remuneration per unit of product has declined.

Construction

A consolidated construction income statement for 1925 shows profits were $998,000,000, total profits withdrawn, $889,000,000, leaving an item of $109,000,000 added to surplus. The return to borrowed capital is an extremely small part of total realized income—less than 1 per cent except in the depression year 1921—while salaries were only 11.4 per cent of total payroll, a figure but slightly larger than for mining. Labor income is probably a more important item in construction than in any of the other important industry groups. The indications are that construction has been fairly profitable.

Transportation, Communication and Electric-power Industries

A consolidated income statement for the transportation group in 1925 shows that the proportion of total payroll going to salaries is high as compared to other groups—30 per cent—indicating the importance of managerial and technical labor and the keeping of records. The large return to borrowed capital is also characteristic, dividends and additions to surplus being not much greater than rent and interest. Net profits credited to individuals were $1,067,000,000, net cash dividends paid and profits withdrawn by individual enterprisers, $709,000,000, added to surplus, $358,000,000.

The steam railways account for over 55 per cent of the total realized income and of wages and interest. The proportion of total realized income going to labor is also smaller for transportation and the utilities than for manufacturing or mining, due to the large investment of capital which received about one-third of the total realized income in 1913 and one-fourth in 1925. The continued decline in the proportion of disbursed income going to labor in the last few years may be due to an increase in operating efficiency and to additional investment.

An analysis of income disbursed by public utility enterprises shows that the net increase from 1919 per wage employee has been less in this group than in other lines. The increased return on investment and the declining or constant rates suggest a considerable improvement in operating efficiency. In the rapidly developing electric power industry, output has increased considerably faster than disbursed income.

Banking

A consolidated income statement for banking in 1925 shows net profits to individual stockholders were $459,000,000, cash dividends paid to individuals, $170,000,000, added to surplus, $289,000,000. The total realized income paid to labor was increasing in the war period, and fell off in 1922, followed by a gradual and partial recovery. The growth of average annual earnings per employee for this group outstrips all the others. While the proportion of disbursed income going to stockholders in dividends falls off in 1914 and 1924, it actually increases in 1921 and 1922. With the rapid increase in salaries, the ratio of dividends to total income in 1925 is smaller than before the war. For a public-service industry whose accounts are carefully regulated, banking appears to be fairly profitable.

Wholesale and Retail Trade

A consolidated income statement for mercantile enterprises in 1925 shows net profits credited to individuals were $5,613,000,000, cash dividends and profits withdrawn, $5,238,000,000, added to surplus $375,000,000. The share of disbursed income going to employees has been gradually increasing, although since the 1922 peak it has fallen off slightly. One factor making for this increase has been the integration of industry. In 1913 corporate sales were only one-fourth of the total, while in 1925 they were over one-third. The decline in proportion of disbursed income going to labor since 1922, while average annual wages were rising, is reminiscent of a similar situation in manufacturing.

Government

An income statement for the government for 1925 indicates that the proportion of realized income going to labor is high; for this group, 81.1 per cent as compared to 84.7 per cent for manufacturing. The average annual salary of government employees has risen steadily even during the depression years but had not caught up to average annual non-agricultural wage income until 1926. The total realized income disbursed by federal, state and local governments and government enterprises in 1925 is $6,130,000,000.

Unclassified and Miscellaneous

The income statement for unclassified enterprises and occupations for 1925 shows the importance of labor and individual enterprisers for this group. Average annual wages in the unclassified group rose less rapidly during the war than in all non-agricultural groups, and, although they have risen steadily since the war, they still lag behind other wages in the increase from 1913. The total realized income in 1925 is $16,452,000,000.

There remain a number of miscellaneous income streams not directly connected with any domestic industry, such as income from urban gardens, rental value of urban owned homes, interest paid to individuals on long-term foreign investments, and similar items, totalling $7,939,000,000 in 1925.

How the Various Regions Have Fared

Different parts of the country have fared very differently. Over 40 per cent of the population is concentrated in the eight middle Atlantic and east-north-central states, which comprise about one-ninth of the total area. On the other hand, the south-central and mountain states, which include nearly half the area of the country, received less than one-fifth of the national income in 1919. Income is even more highly concentrated than population.

New England's income in the last few years has not grown as rapidly as the income of the country as a whole.

The three middle Atlantic states, New York, New Jersey and Pennsylvania, received one-fourth of the national income in 1919 and probably as much as 30 per cent of the total in 1926.

The east-north-central region, including Ohio, Indiana, Illinois, Michigan and Wisconsin received 22 per cent of the country's income in 1919, although its per capita income was not so high as the older portions of the North. The east-north-central region has prospered but the prosperity has not included the agricultural part of the community. In the west-north-central region, including Minnesota, Iowa, Missouri, the Dakotas, Kansas and Nebraska, agriculture in 1919 accounted for over one-third of the total realized income, so that it is not surprising that the income of the region is slightly less in 1926 than in 1919, although there has been a steady increase since 1921.

The south Atlantic region in 1919 showed a per capita income of $445, and received about one-tenth of the national income for that year. Much has been said of the growth of manufacturing in this region, but the value added by manufacturers has hardly kept pace with the growth of non-agricultural income.

The east-south-central states are the poorest states in the Union, although they are probably a little better off today than they were in 1919 when the per capita realized income was only $345.

The west-south-central region drew more than one-third of its income from agriculture in 1919 and its story is similar to that of the west-north-central and east-south-central regions.

Per capita income in the mountain region in 1919 was $634, and only 3.2 per cent of the national income was received in this region.

Less than 7 per cent of the total national income is received in the Pacific states but the per capita income of $793 in 1919 was higher than for any other region.

Sharing the National Income

Judged by the growth of national income, the last few years have been an era of great prosperity for the country as a whole, with slight recessions of business in 1924 and 1927. During this period the per capita realized income has considerably exceeded all previous records, even when price changes are allowed for. When the various regions are considered separately, it appears that only part of the United States has enjoyed this prosperity—the middle Atlantic, the east-north-central and the Pacific states—an area which includes less than half of the population and receives somewhat more than half of the national income.

Available evidence shows nothing which would indicate that the upper income classes have enjoyed more than their accustomed share of the national income in recent years. Average annual labor income of salaried employees has risen steadily since the war and the growth in deflated annual wages per employee has grown still more rapidly. The share of stockholders and of individual enterprisers in total realized income has fully held its own and there is little reason to believe that prosperity has been profitless. Neither does it appear that the share of employees in the national dividend has been declining in recent years.

The growth of national income has gone on in spite of the agricultural depression. While there has been an increase in the income disbursed by the mineral extractive industries, coal mining has not been particularly profitable. Manufacturing and public utilities have prospered but have been disbursing a declining proportion of total income. The total disbursed by government is naturally a smaller proportion of the total income today than during the war. An increasing proportion of our national income comes from foreign investments. Merchandising and the large group of unclassified industries and occupations have shared more than proportionately in the growth of national income, as have the smaller groups, banking and construction. Corporations and government now disburse nearly half of our national income.

There has been an appreciable increase in the proportion of fixed incomes, that is, salaries, interest and rents, a change making for increased stability of business conditions. Cash dividends of corporations approximate fixed incomes to a marked degree and fluctuate scarcely more with business conditions than non-agricultural wage payments. Improved technique and efficiency of operation have apparently been associated with a more rapid growth of output of goods and services than of income in several industry groups.

(The foregoing chapter is based primarily upon the estimates of Dr. Willford I. King.)

XIV

A BIRD'S-EYE VIEW

THE best clue to the importance of recent economic changes is supplied by economic history. What has happened in the United States in the last decade is a phase of the progress of the industrial revolution influenced by the sudden outbreak of the World War and by the equally sudden return of peace.

Science and Economic Change

The nineteenth century saw a great increase in the numbers and the spread of populations of European stock and an increase in material prosperity made possible by the application of science to the work of producing, transporting, manufacturing and distributing goods. By no means did all of this increase in efficiency take the form of net gain in current livelihood. Men had the possibility of raising their standard of consumption, of reducing their hours of work, of giving their children more education and of increasing their numbers. They did all four in part.

The pace at which the sciences have grown and at which discoveries are applied keeps changing. In any given decade the ups and downs mean that some parts of the economic mechanism are being made over while others are growing steadily and still others are languishing. The growth of industry as a whole has been more steady than the growth of its parts.

A fundamental change is the decreasing birth rate in the nations which lead in science and industry. Decreasing numbers have meant an increasing possibility of shortening hours and raising living standards.

The War and Economic Change

The gravest check which economic progress has received since the industrial revolution was inflicted by the World War. All the great nations which lead in science and industry were involved and all reorganized their industry and trade to produce a maximum amount of military supplies and a minimum of civilian goods. In industry and finance there was enormous waste and confusion. Finally, "the war carried off in round numbers thirteen million mobilized men," and is further to be charged with a large share of the responsibility for some ten million deaths from influenza and other epidemics.

Our economic position greatly improved in comparison with Europe's during the war, more because Europe's losses were staggering than because our gains were spectacular.

In numbers withdrawn from civil life, in government controls of industry and in various other ways, the cost of the war to the United States was high. In the last full year before the war our per capita income, taken at the retail prices of 1925, was $621. Starting with this figure as 100, per capita income shrank to 97 in 1914, rose to 99 in 1915, to 106 in 1916, remained constant at that level in 1917 and then declined to 105 in 1918. By the time we were ready for a new industrial start our per capita income had dropped well below the prewar level. Indeed, the average for the eight years of war and post-war readjustments was less than the per capita income of 1913.

The Return of Peace

With the return of peace government controls were thrown off. After some hesitation a business boom began in 1919, due in part to demand for American goods for foreign countries. The value of shipments to Europe reached nearly $5,200,000,000 in 1919, 25 per cent higher than the preceding record, and double the money value in any year since. Domestic demands were scarcely less keen. A runaway market for industrials developed on the New York Stock Exchange. But 1919 was a poor year from the point of view of production; crops were good but in mining and industry the record was bad.

Using 1899 as 100, productivity per worker which had been 104 in 1904 and 110 in 1909 declined to 104 in the boom year, 1919. A drastic financial liquidation followed which presently produced and was then aggravated by a severe industrial depression. By 1921 the number of unemployed surpassed all previous records, and, according to the Federal Trade Commission, retail buying fell off by $7,600,000,000. Other countries were suffering likewise, and our exports dropped $3,700,000,000 or 45 per cent below the preceding year. Business mortalities trebled between 1919 to 1921 and liabilities increased more than five times. More than half the corporations reporting to the internal revenue office lost money in 1921, and the balance of profits fell from $8,000,000,000 in 1919 to less than $500,000,000 in 1921.

The course of business affairs in the United States from 1919 to 1921 was almost exactly paralleled by the course of affairs abroad.

From 1922 to 1927

Such prosperity as the United States has enjoyed since 1922 owes less than usual to foreign stimulation and support. Our domestic business has grown faster than our foreign business. We have contributed more to alleviating the economic hardships of other countries than they have contributed to our activity.

Agriculture, however, has suffered greatly from foreign conditions. Reckoned in physical units our agricultural exports remained above the prewar levels in the years from 1922 to 1927, but fell below the levels to which American farmers had adjusted their output in 1917 to 1920, and to sell these reduced quantities they have had to accept prices which in general were low in comparison with the prices of other commodities.

How the United States has managed to attain a higher per capita income than ever before, although conditions in most other countries were unfavorable and though its basic industry of agriculture was depressed, is the outstanding problem of the cycles of 1921 to 1924, 1924 to 1927 and 1927 to date.

The best answer seems to be that since 1921 we have applied intelligence to the day's work more effectively than ever before. It has been supplemented by efforts to put science into business management, trade union policy and government administration. Technical improvements in industry, in construction, in railroading and in farming have meant increased productivity per worker. Although it is difficult to measure the technical progress, the rate of improvement in the past six years is extraordinary though not wholly unprecedented.

We have found ways of producing more physical goods per hour of labor than before. We have received larger average incomes because we have produced more commodities and services.

If we turn from the well-known scientific contributions of the engineers to those of the psychologists, sociologists and economists, it is still harder to measure the results achieved. Yet it is conceivable that out of the application of the social sciences will grow contributions of great moment to our economic life.

The change in the economic theories on which the American Federation of Labor and certain outside unions are acting may, in the long run, prove to be a vital factor.

From the employing side come reports of scarcely less significance. The art of business management seems to have turned a corner in 1921. And side by side with the changes in trade unions and in business policy, we note the influence of certain general ideas which have gained wide currency in recent years.

First of these is the spirit of caution inspired by the losses of 1920 to 1921; second, a more systematic effort to learn from experience; third, more publicity concerning business activities and closer cooperation among business enterprises; fourth, the belief in the economy of high wages.

The share of government in recent economic changes has not been made the subject of a separate chapter in this volume, but mention must be made of the influence of the Federal Reserve Board, as shown in the chapter on Money and Credit Movements, and the services of the Departments of Commerce and Agriculture, in collecting and diffusing knowledge, mentioned at various places throughout the chapters. Moreover, the federal government has manifested a more intelligent attitude toward the problems of economic organization. Efforts to check extortion have not ceased, but the Government has treated business enterprises as agencies for performing social services.

Hardships Caused by Efficiency

Increasing efficiency brings with it certain business hardships. The technical advances of recent years in the United States have been largely advances in the direction of mass production. A greater volume of goods has been turned out at lower costs per unit. Larger supplies sent to market tend to depress prices, but, in most periods of prosperity, this tendency has been more than offset by an increase in demand. The remarkable fact in recent years is that prices have sagged in spite of the usual increase in demand. Monetary factors can hardly be held responsible for this.

There has been, however, a notable conformity of wholesale price fluctuations in various important countries, and it seems a fair inference that our price level could not have risen rapidly in 1922 to 1927 unless the forces behind the local advance had been powerful enough to pull up world markets.

The reduction in unit costs and the increase in the supply of wares turned out by methods of mass production combined with international forces to keep the price level from rising buoyantly in the active years of our period.

Sagging prices made it harder to conduct business with profit. Reductions in cost by the more alert producers certainly made matters more difficult for many direct and indirect competitors; so that "profitless prosperity," like other popular paradoxes, combines an element of truth with an element of falsehood.

Competition of new products and new tastes has been an extraordinary feature of recent years and has resulted in hardships among long-established industries. The migration of industry has also set up stresses and strains, and, finally, technological unemployment has resulted from the displacement of men by machinery.

In general our wage-earners have met technological unemployment in manufacturing mainly by turning to other ways of making a living. We may wonder at the versatility, initiative and mobility of the American people as evidenced afresh by our prompt shifting of occupations on so great a scale. We may wonder also at the rapid expansion of the trades which have absorbed over five million persons in seven years without reducing wage rates. But we must remember that these shifts have been in large measure compulsory, and that our economic progress has imposed severe suffering upon hundreds of thousands of individuals.

We have noted that some of the difficulties of agriculture have been due to reductions in foreign demand and increases in foreign supply. Fresh difficulties have been created for our farmers by shifts in domestic demand and by increases in technical efficiency.

Increased productivity per worker has been brought about in agriculture, as in manufacturing, by putting more intelligence into the day's work, but this has brought with it many stresses and strains as is shown in the chapter on Agriculture.

Agriculture has kept up its per capita quota of the national income because of the withdrawal of thousands of workers. Such a calling can hardly be regarded as flourishing.

Interrelations among Economic Changes

We have observed that foreign conditions have been none too favorable to American business, and they have been especially unfavorable to our agriculture; that such prosperity as we have enjoyed has been earned by many-sided and strenuous efforts; that while increasing efficiency has added to real income, it has put severe pressure upon competitors. One further factor remains still to be mentioned.

A reduction in the birth rate has been going on during our period in most of the states of the Union. The birth rate and death rate and the changes in migration reduced the average annual increase of population from 1,800,000 in 1920 to 1925 to 1,545,000 in 1925 to 1928.

This retardation in the growth of our population has profoundly affected the whole social situation. For one thing it was a factor in the successful resistance of trade unions to the drive to "liquidate labor" in the depression of 1920 to 1921. Prices of labor were cut but not cut so much as prices of consumers' goods, and, when employment increased, wage-earners found themselves in possession of relatively large purchasing power. In most periods of prosperity, wage rates on the rise lag behind living costs. That the reverse is true in our period must be ascribed in part to the relatively slow increase in the number of job hunters. Moreover, it seems sound to ascribe a part of our gains in technical efficiency to the high price of labor.

Had there been no reduction in birth rates and no restriction of immigration, the United States would contain several millions more people, and these probably would be producing a greater volume of goods in spite of more unemployment and a less advanced state of industrial technique. The national income would be rising more rapidly than it is, but per capita income would be growing more slowly. We must conclude that Americans prefer to raise the economic level of average life rather than to maximize national wealth.

American prosperity in non-agricultural lines would have been decidedly greater if the six million American farmers had been flourishing. The United States as a whole would have been better off if all foreign countries had been prosperous. On the other hand, our farmers would have been much worse off if the majority of Americans had not been receiving relatively large incomes, and if our factories and railways had not been highly efficient. The relative stability of business in general has been another factor of great importance.

It is evident that the years 1922 to 1928 brought good times to the majority of our people though by no means to all.

Business Cycles, 1921 to 1927

We have not had a genuine boom in business at large since 1919. We have not had a commercial crisis since 1920 or a severe depression since 1921. This has encouraged certain optimists to claim that business cycles have been "ironed out."

Careful analysis of prewar, war and post-war business cycles warrants the conclusion that business cycles have not been "ironed out" in the United States, but that the amplitude of cyclical fluctuations has been reduced. This reduction dates only from 1924.

That we have not had a serious crisis since 1920 or a severe depression since 1921 is no guarantee that we shall be equally prudent, skillful and fortunate in future. Business prosperity must be earned, and we can earn it only by continuous intelligent effort.

The rate of progress in the arts of industry and business is of course an uncertainty. The present pace may slacken; but that is a matter in which experience is not a trustworthy guide. All that is certain is that whatever progress in efficiency we continue to make must be won by bold and intelligent work such as has earned our recent successes.

XV

CONCLUSIONS OF THE COMMITTEE

ACCELERATION rather than structural change is the key to an understanding of recent economic developments in the United States. The years from 1922 to 1929 owe less to fundamental change than to our intensified activity. The changes have not been in structure but in speed and spread. It is the scale and tempo of these developments which give them new importance. The increase in power and machinery, improvements in management and in finance—all represent an accumulation of forces which have been at work for a long time.

Seven Good Years

While these years have seen intense activity, the committee notes that the activity has been spotty. Certain groups have been more active than other groups, certain industries busier than their neighbors, certain geographical areas more prosperous than other areas.

But in spite of this variability, the rising standard of living has been widespread and has reached the highest level in our national history.

While industrial, agricultural, and commercial activity has been spotty, the broad social advantages of our accelerated activity have been general. Good roads have not been limited to intensively active areas; educational advantages, radio entertainment, swift and dependable transportation and communication have served the entire population. This spread of higher living standards is not new, but its degree and scope have given it new importance.

Our use of power has grown three and three-quarters times faster than the growth in population. Huge reservoirs of electric power have been created by means of interconnection between power plants, and power-driven specialized machines have penetrated into every section, urban and rural. We now use as much electrical energy as all the rest of the world combined.

The speed and spread of our recent economic activity may again be observed in the breadth of the sources from which capital and credit have been available and in the quickening method of their use.

For most of this period our earnings and savings have supplied the additional capital for financing the rapid development of industry and in addition we have furnished several billions of dollars for loans abroad. In the later months of the period studied (the report went to press in March, 1929) a new tendency has been observed. Investors as well as speculators have invested through the stock exchanges not only their savings but the proceeds of loans secured through banks and brokers, until the credit structure has been sufficiently weighted to indicate a credit stringency, with an abnormally high rate for call money and a rise in the rate of interest for business purposes. These are factors in the problem of maintaining economic balance which we shall touch on later.

Industry has reduced its requirements for short-term credits from the banks through issuance of securities, and the preference for permanent methods of financing business is shown in the small increase in commercial loans of banks as contrasted with the increase in security holdings and collateral loans.

Imports of gold early in the period, tending to make credit easier, the growth of savings in spite of increased spending, our confidence in the financial structure, especially in the Federal Reserve system and the ability of the system to move available credit wherever needed mark a great advance.

There also has been an increase in the velocity of the turnover of credit, due to improved transportation and communication, scientific control of inventories, the simplification movement and our more rapid turnover of commodities. And—another characteristic of the past seven years—business has developed a new degree of economy in the use of credit.

Prices, Wages and Living Costs

One distinctive characteristic of the years under review is to be found in the field of price relationships, wages and the cost of living. In the prewar period, 1896 to 1913, the purchasing power of wages advanced only 0.5 per cent a year; in the years 1922 to 1927, the purchasing power of wages rose 2.1 per cent a year.

An increasing tendency toward price stability has characterized the period under review, tending toward a more equitable basis of exchange of products among the various groups. Profits from the fluctuations of individual commodity prices and from changes in the relation among prices have tended to diminish.

In the decreasing variability of prices at a time when the productivity per hour of labor has been greatly increased and the demand for goods has been greatly stimulated, the committee finds a most significant factor. With rising wages and relatively stable prices, we have become consumers of what we produce to an extent never before realized.

The principle of high wages and low costs as a policy of enlightened industrial practice has contributed much to this fortunate situation, and, while the principle is in no sense new, its application on a broad scale impresses the committee as a fundamental development.

Production

In the years since 1922 we note that primary production has been increasing 2.5 per cent a year, manufacturing 4 per cent a year, transportation 4 per cent. Taking 1919—a year of fair harvests—as a base, crop production in 1922 was 102; in 1925, 104, in 1927, 106. These rates of increase may have been surpassed in other years, but the striking increases in productivity per man hour are unique so far as we can learn.

The increases in productivity have been coupled with a marked increase in the consuming power of the American people. It is the degree of activity, the almost insatiable appetite for goods and services, the abounding production of things which almost any one may want which are so strikingly characteristic of recent years.

Consumption

The survey shows that as a people we have grown less and less concerned about the primary needs of food, clothing and shelter. We note also the rapidly increasing number of families having a considerable margin of earnings which may be saved or spent at the option of the possessor. Finally, the recognition of the great importance of leisure in helping to create new needs and new and broader markets began to be recognized in the period under review. In the judgment of the committee few of our current economic developments have made such widespread changes in our national life or promise so much for the future as the utilization of our increasing leisure.

Mass Services

We now apply to many kinds of services the methods of mass-production. We have integrated and organized these services so that they may be called "mass services." They have helped to create a new standard of comfortable living and to afford employment for millions of workers crowded out of agriculture and the extractive and fabricating industries.

It was the timely development of "mass services" which saved our country from a critical unemployment problem in recent years.

Unemployment

No serious cyclical fluctuations have characterized the period under review, so that the unemployment due to the business cycle has not been marked; but it has become evident that unemployment can arise as a result of industrial efficiency as well as of inefficiency. The survey seems to indicate that the time has come to devote continuing attention not only to the problems of cyclical unemployment but also to technological unemployment.

Economic readjustments have been going on in agriculture as well as manufacturing and transportation, and they have affected employers as well as employees. There is nothing new about these problems. The accelerated rate of readjustment is what has been engaging the attention of wage-earners and management.

Our Natural Advantages

It is self-evident that our economic position is due in no slight degree to certain natural advantages listed in the first chapter of this book. We have abundant raw materials and sources of power, we have a large domestic market, we have no trade barriers between the states, we speak one language. Advertising is peculiarly effective in a country such as ours. And these circumstances should be borne in mind as an important factor in the speed and spread which have characterized our recent economic development.

Economically we believe that we have a boundless field before us, that there are new wants which will make way endlessly for newer wants, as rapidly as they are satisfied. We see no practical limits to the possibilities of further lifting the national standard of living. Saturation points are remote, and invention and discovery are constantly setting before us new goals for achievement.

A Technique of Economic Balance

But while all this is true, the Committee reports:

> The outstanding fact which is illuminated by the survey is that we cannot maintain our economic advantage or hope fully to realize on our economic future, unless we consciously accept the principle of equilibrium and apply it skillfuly in every economic relation.
>
> The forces that bear upon our economic relationships have always been sensitive. All parts of our economic structure, from the prime processes of making and of marketing to the facilitating functions of finance, are and have been interdependent and easily affected. And therein lies the danger: That through ignorance of economic principles, or through selfish greed, or inadequate leadership, the steady balance will be disturbed to our economic detriment.
>
> If natural resources, especially the land, are wastefully used; if money in quantity is taken out of production and employed for speculation; if any group develops a method

of artificial price advancement which puts one commodity out of balance with other commodities; if either management or labor disregards the common interest—to this extent equilibrium will be destroyed and destroyed for all.

To maintain the dynamic equilibrium of recent years is, indeed, a problem of leadership which more and more demands deliberate public attention and control. Research and study, the orderly classification of knowledge, joined to increasing skill, well may make complete control of the economic system a possibility. The problems are many and difficult, but the degree of progress in recent years inspires us with high hopes.

In the marked balance of consumption and production, for example, the control of the economic organism is increasingly evident. With the development of a stream of credit to facilitate business operations and with flexible power to energize industry and to increase the effectiveness of the workers has come an increasing evenness in the flow of production. Once an intermittent starting and stopping of production-consumption was characteristic of the economic situation. It was jerky and unpredictable, and overproduction was followed by a pause for consumption to catch up. For the seven years under survey, a more marked balance of production-consumption is evident.

With greater knowledge of consuming habits, with more accurate records of the goods consumed, a sensitive contact has been established between the factors of production and consumption which formerly were so often out of balance.

Where pools of goods once were accumulated by the manufacturer, the wholesaler, the jobber, and the retailer, where high inventories once meant distress, shutdowns, failures, and unemployment whenever the demand subsided, there is now a more even flow from producer to consumer.

Increasing skill and scientific data have made the anticipation of demand far more accurate, and by accurate anticipation the deliberate balance between production and consumption has in a measure been maintained. By advertising and other promotional devices, by scientific fact finding, by a carefully predeveloped consumption, a measurable pull on production has been created which releases capital otherwise tied up in immobile goods and furthers the organic balance of economic forces. In many cases the rate of production-consumption seems to be fairly well under control.

To maintain this balance and to extend it into fields which are not now in balance with the more prosperous elements of the nation is clearly an important problem of leadership. With certain natural resources still wastefully exploited, with great industries, such as agriculture and coal mining, still below the general level of prosperity, with certain regions retarded, there remains much to do. To bring these more fully into the stream of successful economic forces is a problem of the first order.

Our complex and intricate economic machine can produce, but to keep it producing continuously it must be maintained in balance. During the past few years equilibrium has been fairly well maintained. We have not wasted the hours of labor by strikes or lockouts. Until recently we have not diverted savings from productive business to speculation. There has been balance between the economic forces—not perfect balance but a degree of balance which has enabled the intricate machine to produce and to serve our people.

As long as the appetite for goods and services is practically insatiable, as it appears to be, and as long as productivity can be consistently increased, it would seem that we can go on with increasing activity. But we can do this only if we develop a technique of balance. Toward such a technique the committee believes the skillful work of the economists, engineers, and statisticians who prepared the survey on which we have based the facts and interpretations expressed in this brief report, will contribute. . . .

We recommend a study of the fact-finding survey as a whole to all who are faced with the problems of business administration and public leadership.

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